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THE

AMERICAN JOURNAL

OF THE

MEDICAL SCIENCES.

EDITED BY

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VOL. I.

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LEA & BLANCHARD.
LONDON:
WILEY & PUTNAM.
....
1841.

TO READERS AND CORRESPONDENTS.

The Review signed "An Old Army Surgeon," even were it not objectionable from its tone, would be entirely inadmissible in this Journal, as it is our invariable rule never to give insertion to any article which is not accompanied by the real signature of the writer.

Some of our friends have inquired why no notice was taken in our last Number of the very interesting experiments of Joerg on the Action of Medicines, an account of which, copied from the *London Medical Gazette*, has recently appeared in some of our cotemporaries. In reply we will state that these experiments are no longer novelties. They were performed nearly twenty years ago, and a report of them was published in 1825, in a volume entitled "*Materialien zu einer kunftigen Heilmittellehre durch Versuche der Arzneyen an gesunden Menschen*," &c., an elaborate review of which will be found in the Number of this Journal for May, 1832.

The following works have been received:—

First Lines of Physiology; designed for the use of Students of Medicine. By DANIEL OLIVER, M. D., LL. D., A. A. S., Prof. Mat. Med. in the Medical College of Ohio. Philadelphia, 1840. Herman Hooker. (From the publisher.)

Library of Practical Medicine. Diseases of the Organs of Respiration. Philadelphia, 1841. Lea & Blanchard. (From the publishers.)

Lectures on the Theory and Practice of Physic, delivered in the College of Physicians and Surgeons of the University of the State of New York. By the late DAVID HOSACK, M. D., LL. D., F. R. S., Prof. of the Theory and Practice, &c., and of Clinical Medicine in that Institution. With an Introductory Letter, by N. CHAPMAN, M. D., Prof. of the Theory and Practice of Medicine in the University of Pennsylvania, &c. Edited by his friend and former pupil HENRY W. DUCACHET, D. D., Rector of St. Stephen's Church, Philadelphia. Philadelphia, 1838. Herman Hooker. (From the publisher.)

Outlines of Anatomy and Physiology; translated from the French of H. MILNE EDWARDS, M. D., Prof. of Natural History at the Royal College of Henry IV, &c., &c., &c. By I. F. W. LANE, M. D. Boston, 1841. Little & Brown. (From the publishers.)

Die Lehre von der Zurechnungsfähigkeit bei zweifelhaften Gemüthszuständen. Fur Aerzte und Juristen praktisch dargestellt, von Dr. ADOLPH SCHNITZER, praktischen Arzte, Operateur und Geburtshelfer zu Berlin, &c., &c. Berlin, 1840. (From Dr. OPPENHEIM.)

Beitrag zur Geschichte der Manie ohne Delirium. Von Dr. JOHANN WILHELM HEINRICH CONRADI. Gottingen, 1835. (From Dr. OPPENHEIM.)

Ausführliche Encyklopädie der gesammten Staatsarzneikunde, bearbeitet und herausgegeben, von GEO. F. MOST, Doctor der Philosophie, Medicin, Chirurgie und Geburtshülfe, &c., &c. Leipzig, 1839-40. No. 7 to 14 inclusive. (From Dr. OPPENHEIM.)

Lettre a l'Académie de Médecine. Examen du Rapport sur la question de la dissolution des Calculs urinaires. Par LEROY D'ETIOLES, M. D. Paris, 1839. (From Dr. OPPENHEIM.)

A Visit to thirteen Asylums for the Insane in Europe; to which are added a brief notice of similar institutions in Transatlantic countries, and in the United

States, and an Essay on the Causes, Duration, Termination and Moral Treatment of Insanity; with copious Statistics. By PLINY EARLE, M. D., Resident Physician of Friends Asylum for the Insane at Frankford, &c., &c., &c. Philadelphia, 1841. J. Dobson. (From the author.)

Medical Etiquette; or an Essay upon the Laws and Regulations which ought to govern the Conduct of Members of the Medical Profession, in their relation to each other. Compiled exclusively for the profession. By ABRAHAM BANKS, Esq., M. R. C. S., &c., &c., &c. London, 1837. (From the author.)

Report of THOMAS LAWSON, M. D., Surgeon-General U. S. Army. Communicated by the President to the two Houses of Congress at the commencement of the second session, twenty-sixth Congress. Washington, 1840. (From the Surgeon-General.)

Annual Report of the Board of Trustees of the Massachusetts General Hospital for the year 1840. Boston, 1841. (From Dr. L. V. BELL.)

Second Annual Report of the Directors and Superintendant of the Ohio Lunatic Asylum, to the thirty-ninth General Assembly. Presented 20th December 1840. Columbus, 1840. (From Dr. AWL.)

Journal of the Proceedings of a Convention of the Physicians of Kentucky, held in Frankford on the 11th January 1841. Frankford, 1841.

Memorandum of a late Visit to some of the Principal Hospitals, Prisons, &c., in France, Scotland and England. Embraced in a letter to the Acting Committee of the Philadelphia Society for Alleviating the Miseries of Public Prisons. Philadelphia, 1840.

An Appeal to the Citizens of Buffalo, and of the county of Erie, in behalf of new and more efficient means of Medical relief for the Sick Poor. By AUSTIN FLINT, M. D. Buffalo, 1841. (From the author.)

Rambles in Europe in 1839; with Sketches of prominent Surgeons, Physicians, Medical Schools, Hospitals, Literary Personages, Scenery, &c. By WILLIAM GIBSON, M. D., Prof. of Surgery in the University of Pennsylvania, Senior Surgeon to the Philadelphia Hospital, &c., &c. Philadelphia, 1841. Lea & Blanchard. (From the author.)

A Reply to an Attack by HENRY J. BOWDITCH, M. D., upon the essay on the Principal Writings of P. Ch. A. LOUIS, M. D., as contained in the Medical and Physiological Commentaries. By the Author. Boston, 1840. (From the author, M. PAINE, M. D.)

Introductory Lecture before the Surgical Class of Geneva Medical College. Delivered December 1, 1840. By FRANK HAMILTON, M. D., Prof. of Surgery. Published by request of the Class. Geneva, 1840. (From the author.)

Introductory Lecture to the course of Obstetrics and Diseases of Women and Children in Jefferson Medical College of Philadelphia, for the session 1840–41. By R. M. HUSTON, M. D., Prof. of Obstetrics and the Diseases of Women and Children, &c., &c. Published by the Members of the Class. Philadelphia, 1840. (From the author.)

Catalogue of the Officers of Geneva College; and of the Faculty and Students of the Medical Department for 1840–41. Geneva, 1841. (From the Medical Faculty.)

Harvard University. Catalogue of Students attending Medical Lectures in Boston, 1840–41, with a circular of the Faculty. Boston, 1841. (From the Medical Faculty.)

Annual Catalogue of the Officers and Students of the Medical Institute of Louisville for 1840–41. Louisville, Ky., 1841. (From Prof. SHORT.)

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Dissertations on Diseases of the Digestive, Urinary, and Uterine Organs. By Drs. Joy, Symonds, Budd, Thomson, Christison, Ferguson, and Simpson. Edited by Alex. Tweedie, M. D., F. R. S., &c., with notes by W. W. Gerhard, M. D. Philadelphia, Lea & Blanchard, 1841. (From the Publishers.)

Annual Announcement of the Medical Department of the Transylvania University, containing the circular for the ensuing session; and the Catalogue of Pupils, and of the Graduating Class, for 1840–41. (From Prof. Mitchell, Dean of the Faculty.)

The Edinburgh Medical and Surgical Journal, January, 1841. (In exchange.)

The British and Foreign Medical Review, or Quarterly Journal of Practical Medicine and Surgery. Edited by JOHN FORBES, M. D., F. R. S., &c., &c., January 1841. (In exchange.)

The Medico-Chirurgical Review and Journal of Practical Medicine. Edited by JAMES JOHNSON, M. D., and HENRY JAMES JOHNSON, Esq., January 1841. (In exchange.)

The London Medical Gazette, October, November and December, 1840. (In exchange.)

Revue Médicale, July, August and September, 1840. (In exchange.)

Gazette Médicale de Paris, August, September and October, 1840. (In exchange.)

Journal de Médecine et de Chirurgie Pratiques, August, September and October, 1840. (In exchange.)

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Journal des Connaissances Médicales Pratiques et de Pharmacologie, August, September and October, 1840. (In exchange.)

La Lancette Française, Gazette des Höpitaux civils et militaires, August, September and October, 1840. (In exchange.)

Journal de Pharmacie, August, September and October, 1840. (In exchange.)

Zeitschrift für die gesammte Medicin, mit besonderer Rücksicht auf Hospitalpraxis und ausländische Literatur. Herausgegeben, von J. C. G. FRICKE und F. W. OPPENHEIM. May, June, July, August, September and October, 1840. (In exchange.)

Jahrbuch der gesammten Staats-arzneikunde, herausgegeben, von Dr. C. F. L. WILDBERG. Leipzig. Vol. V, No. 6.

The American Medical Library and Intelligencer, November and December, 1840, and January, 1841. (In exchange.)

Boston Medical and Surgical Journal, January, February and March, 1841. (In exchange.)

The Medical Examiner, December, 1840, and January and February, 1841. (In exchange.)

The Western Journal of Medicine and Surgery, January and March,* 1841. (In exchange.)

The American Journal of Pharmacy, January, 1841. (In exchange.)

The American Journal of Dental Science, January and February, 1841. (In exchange.)

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* The February Number, 1841, of this Journal has not reached us.

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XI. The Library of Practical Medicine—A System of Practical Medicine, comprised in a series of Original Dissertations. Arranged and edited by Alexander Tweedie, M. D., F. R. S., &c. &c. Diseases of the Organs of Respiration. 8vo. pp. 575. Philadelphia: Lea & Blanchard. - 474
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TO READERS AND CORRESPONDENTS.

Five months having elapsed since the publication of our preceding Number, a larger than ordinary amount of matter for our Summary has accumulated on our hands. To enable us to present whatever of this is important, so that our Summary may exhibit a complete view of the progress of our science, *twelve additional pages have been given in this Number.*

We invite particular attention to the valuable contributions to the department of Medical Jurisprudence and Toxicology in our Summary, by our colleague, Dr. T. R. Beck.

The following works have been received:—

Observations on the diseases incident to Pregnancy and Childbed. By Fleetwood Churchill, M. D., Physician to the Western Lying-in Hospital, &c., &c. Dublin, 1840. (From the author.)

A System of Practical Medicine, comprised in a series of original dissertations. Arranged and edited by Alexander Tweedie, M. D., F. R. S., &c. Vol. II: Diseases of the Nervous System. With notes and additions by W. W. Gerhard, M.D., Physician to the Philadelphia Hospital, Blockley, &c. Philada. 1840: Lea & Blanchard. (From the publishers.)

Second Annual Report of the Registrar General of Births, Deaths and Marriages in England. London, 1840. (From Mr. Farr.)

Meteorological Register for the years 1826, 7, 8, 9, and 1830; from observations made by the Surgeons of the Army and others, at the Military Posts of the United States. Prepared under the direction of Thomas Lawson, M. D., Surgeon-General of the United States Army. To which is appended the Meteorological Register for the years 1822, 3, 4, and 5; compiled under the direction of Joseph Lovell, late Surgeon-General of the United States Army. [Published for the use of the medical officers of the army.] Philada. 1840. (From T. Lawson, M. D., Surgeon-General.)

Grundzüge zur Dipsobiostatik oder politisch-arithmetische auf ärztliche Beobachtung gegründete Darstellung der Nachtheile, welche durch den Missbrauch der Geistigen Getränke in Hinsicht auf Bevölkerung and Lebentdauer sich ergeben. Von Dr. Fr. Wilh. Lippich. Laibach, 1834. (From Dr. Oppenheim.)

Erster Medicinischer Jahres bericht vom Marien-Krankenhaus für Armie in St. Petersburgh vom Jahr 1836. Dr. H. U. L. V. Roos. St. Petersburgh, 1837. (From the same.)

Der epidemische Brochdurchfall beobachtet zu Nishni-Norogorod, von J. G. Lindgren, Dr. Med. Dorpat, 1831. (From the same.)

Lectures on the Theory and Practice of Physic. By Wm. Stokes, M. D. Lecturer at the Medical School, Park street, Dublin, &c. With numerous notes and twelve additional Lectures. By John Bell, M. D., Lecturer on the Institutes of Medicine and Medical Jurisprudence, &c., &c. Philada. 1840: Haswell, Barrington & Haswell. (From the publishers.)

Pharmocopœa Danica. Hafniæ, 1840. (From Dr. Otto, of Copenhagen.)

De Strabismo, auctore N. G. Melchior. Hafniæ, 1838. (From the same.)

De Viribus et Rationibus dosium calomellis, auctore C. J. Æ. Hornemann. Hauniæ, 1839. (From the same.)

De versione in caput in situ fœtus obliquo. Hauniæ, 1840. (From the same.)

De carne Mammalium domesticum ægrotantium judicanda. Hauniæ, 1840. (From the same.)

The Dublin Dissector, or Manual of Anatomy; comprising a description of the Bones, Muscles, Vessels, Nerves, and Viscera; also, the relative Anatomy of the different regions of the human body, together with the elements of Pathology. By Robert Harrison, A. M., M. B., T. C. D., Member of, and one of the Professors of Anatomy in, the Royal College of Surgeons in Ireland, and one of the Surgeons of the city of Dublin Hospital. First American, from the fifth enlarged Dublin edition. With additions by Robert Watts, Jun., M. D., Prof. of Anatomy in the college of Physicians and Surgeons in the city of New York. New York, 1840. (From Haswell, Barrington & Haswell.)

Rhinoplastic Operations. With some remarks on the Autoplastic Methods usually adopted for the restoration of parts lost by accident or disease. By J. Mason Warren, M. D. Boston, 1840. (From the author.)

Remarks on Fractures. Read at the annual meeting of the Massachusetts Medical Society, May 27, 1840. By A. L. Pierson, M. D., Fellow of the Society. Boston, 1840. (From the author.)

On Physical Education. A Lecture delivered before the American Institute of Instruction, at its annual session holden in Springfield, August, 1839. By Abel L. Pierson, M. D., of Salem. Boston, 1840. (From the author.)

Report of the Superintendant of the Boston Lunatic Hospital, and Physician to the Public Institutions at South Boston, July 1, 1840. Boston, 1840. (From L. Shattuck, Esq.)

An Introductory Lecture delivered before the Medical Class of the University of Maryland, Sept. 1840. By Wm. E. A. Aikin, M. D., Professor of Chemistry and Pharmacy. Baltimore, 1840. (From the author.)

Theory of the Daguerrotype Process. By Wm. E. A. Aikin, M. D., Prof. of Chemistry and Pharmacy in the University of Maryland. (From the author.)

A second Appeal to the People of Pennsylvania on the subject of an Asylum for the Insane Poor. Philada. 1840. (From Dr. Dunglison.)

Medical Science and the Medical Profession in Europe and the United States. An Introductory Lecture by Harvey Lindsly, Professor of Obstetric Medicine in Columbian College, Nov. 1840. Washington, 1840. (From the author.)

New Remedies: the Method of Preparing and Administering them; their Effects on the Healthy and Diseased Economy, &c. Third edition, with numerous modifications and additions. By ROBLEY DUNGLISON, M. D., Professor of the Institutes of Medicine and Materia Medica in Jefferson Medical College, Philadelphia, &c,. &c., &c. Philada, 1840. Lea & Blanchard. (From the publishers.)

The American Medical Almanac for 1841, designed for the daily use of Practising Physicians, Surgeons, Students, and Apothecaries. By J. V. C. SMITH, M. D., Editor of the Boston Medical and Surgical Journal. Boston, 1840. (From the author.)

Report of the Directors of the Connecticut Retreat for the Insane. Hartford, 1840. (From Dr. A. Brigham.)

Introductory Lecture to the Winter course of Anatomy, in the Philadelphia School of Anatomy. By JAMES M'CLINTOCK, M. D., Lecturer on Anatomy and Surgery; one of the Physicians to the Philadelphia Hospital, &c. Published by the Class. Philadelphia, 1840. (From the author.)

A Memoir of the Life and Character of the Late Joseph Parrish, M. D. Read before the Medical Society of Philadelphia, October 23, 1840. By GEORGE B. Wood, M. D. [This came to hand just as this sheet was preparing for press, and of course too late for notice in this Number.]

Catalogue and Circular of the Albany Medical College. Albany, 1840. (From the Faculty.)

Annual Circular of the Medical Institution of Yale College. New Haven, 1840. (From the Faculty.)

Catalogue of the Officers and Students of the Medical College of the State of South Carolina, 1839–40. (From Prof. GEDDINGS.)

Annual Announcement of the Trustees and Faculty of the Medical College of the State of South Carolina for the session of 1840–41. Charleston, 1840. (From Prof. GEDDINGS.)

Annual Circular of the Vermont Academy of Medicine for the session of March, 1840. Castleton, Oct. 1840. (From Prof. BRYAN.)

The British and Foreign Medical Review, July and October, 1840. (In exchange.)

The Edinburgh Medical and Surgical Journal, July and October, 1840. (In exchange.)

The Medico-Chirurgical Review, July and October, 1840. (In exchange.)

The London Medical Gazette, May, June, July, August and September. 1840. (In exchange.)

Revue Scientifique et Industrielle, &c., sous la direction du Docteur QUESNEVILLE, April, 1840. (In exchange.)

Revue Médicale Française et Etrangère, March, April, May, and June, 1840. (In exchange.)

Journal de Médecine et de Chirurgie Pratiques, April, May, June, and July, 1840. (In exchange.)

Journal de Pharmacie et des Sciences Accessoires, April, May, June, and July, 1840. (In exchange.)

Journal des Connaissances Médicales Pratiques et de Pharmacologie, April, May, June, and July, 1840. (In exchange.)

Journal des Connaissances Médico-Chirurgicales, April, May, June, and July, 1840. (In exchange.)

La Lancette Française, Gazette des Höpitaux civils et militaires, April, May, June, and July, 1840. (In exchange.)

Gazette Médicale de Paris, April, May, June, and July, 1840. (In exchange.)

Zeitschrift für die gesammte Medicin, January, February, March, and April, 1840. (In exchange.)

Jahrbuch der gesammten Staats-arzneikunde, herausgegeben. Von Dr. C. F. L. Wildberg. Leipzig, 1839. B. V. h. 4, 5. (From Dr. Oppenheim.)

Schweizerische Zeitschrift für Natur und heilkunde. Von Dr. C. F. F. Pommer, Prof. der Med. an der Hochschute in Zurich. Vol. iv, Nos. 1, 2, 3.

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The West India Journal of Science, August, 1840. (In exchange.)

The New York Journal of Medicine and Surgery, July, and October, 1840. (In exchange.)

The Boston Medical and Surgical Journal, August, September, October, November and December, 1840. (In exchange.)

The Select Medical Library and Eclectic Journal of Medicine, August, September, and October, 1840. (In exchange.)

The Medical Examiner, July, August, September, October, and November. 1840. (In exchange.)

The Western Journal of Medicine and Surgery, July, August, September, October, November, and December, 1840. (In exchange.)

The American Journal of Pharmacy, July and October, 1840. (In exchange.)

The American Medical Library and Intelligencer, August, September, and October, 1840. (In exchange.)

The American Journal of Dental Science, August, and September. 1840. (In exchange.)

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XVI. The Elements of Materia Medica, comprehending the Natural History, Preparation, Properties, Effects, and Uses of Medicines. Part II, containing the Vegetable and Animal Materia Medica. By Jonathan Pereira, F. R. S., and L. S., Member of the Royal College of Surgeons, &c. London: 1840. 8vo., pp. 891. - - - - - - - . - 191
XVII. First Annual Report of the Registrar General of Births, Deaths, and Marriages in England. London: 1839. 8vo., pp. 168. - - - 192
XVIII. Erster Medicinischer Jahres-Bericht vom Marien-Krankenhaus für Arme in St. Petersburg vom Jahr, 1836. Von dem Oberarzt dieser Anstalt Dr. H. U. L. V. Roos, Staatsrath, Ritter, u. s. w. St. Petersburg, 1837. 8vo., pp. 112.
The First Annual Medical Report of the Marien Hospital for the Poor in St. Petersburg, for the year 1836. By Dr. H. U. L. Von Roos, Chief Physician to the Institution, &c. - - - - - - - - - 195
XIX. Pharmocopœa Danica, regia auctoritate a Collegio Sanitate Regio Hafniensi edita. Hafniæ: 1840.
Danish Pharmacopœia, edited, with the royal authority, by the Royal College of Health of Copenhagen. Copenhagen: 1840. 8vo., pp. 316. 199
XX. Lectures on the Theory and Practice of Physic. By William Stokes, M. D., Lecturer at the Medical School, Park St., Dublin; Physician to the Meath Hospital, &c., &c. Second American edition, with numerous notes, and twelve additional lectures. By John Bell, M. D., &c. Philadelphia: 1840. 8vo., pp. 692. - - - - - - - - - - 200
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OF THE
MEDICAL SCIENCES.

ART. I.—*Statistical Researches relative to the Etiology of Pulmonary and Rheumatic Diseases, illustrating the application of the Laws of Climate to the Science of Medicine; based on the Records of the Medical Department and Adjutant General's Office.* By SAMUEL FORRY, M. D., Medical Staff, United States Army.

THE object of the author in this paper is, to elucidate the laws which obtain in regard to the etiology of pulmonary and rheumatic diseases in the several systems of climate pertaining to the United States, and to demonstrate the advantages of peninsular Florida as a winter residence for pulmonic invalids.

Stretching over a vast extent of territory, the United States present a corresponding variety of climate, exhibiting, under multiform aspects, the animal and vegetable kingdoms. Occupying, as we do, the eastern coast of a continent of the northern hemisphere, the human frame is exposed to the contrasted seasons of the most excessive clime.* The extreme north has a climate in which cold predominates, vexed by winds that have passed over interminable snows; the south acknowledges the genial influence of the sun; whilst the middle vibrates alternately to both extremes. The climate of the United States is, in truth, remarkably inconstant and variable, "passing rapidly," says Malte-Brun, "from the frosts of Norway to the scorching heats of Africa, and from the humidity of Holland to the drought of Castile." So sudden are the vicissitudes of weather in the middle States, that in the language of the Spectator, we often "lie down in July and rise in December."

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* So striking is this difference between our coast and the western coast of Europe, that Fort Sullivan, Maine, notwithstanding it is more than 11° south of Edinburg, Scot., exhibits a mean annual temperature 5½° lower, and Bordeaux, which is parallel with Fort Sullivan, has an annual temperature 15° degrees higher. These results find a ready explanation in physical causes. Europe is separated from the polar circle by an ocean, whilst eastern America stretches northwards at least to the 82° of latitude. The former, intersected by seas which temper the climate, moderating alike the excess of heat and cold, may be considered a mere prolongation of the eastern continent, whilst the northern

The term *climate*, which is limited, in its rigorous acceptation, to a mere geographical division, and in ordinary parlance to the temperature only of a region, possesses, in medical science, a wider signification. It embraces not only the temperature of the atmosphere, but all those modifications of it which produce a sensible effect on our organs, such as its serenity and humidity, changes of electric tension, variations of barometric pressure, the admixture of terrestial emanations dissolved in its moisture, and its tranquility as respects both horizontal and vertical currents. Climate, in a word, constitutes the aggregate of all the external physical circumstances appertaining to each locality in its relation to organic nature. "To observe,"

lands of the latter, elevated from 3000 to 5000 feet, become a great reservoir of ice and snow, which diminish the temperature of adjoining regions. These results gave rise to the opinion that the old continent is warmer than the new, but more recent observation has shown that the western coast of both has a higher temperature than the eastern, in corresponding latitudes. This arises mainly from the steady prevalence of westerly winds, between the parallels of 30° and 40°; for there is thus swept from the ocean, which never sinks below the freezing point, a humid atmosphere, which, in its passage over the land, has a constant tendency to establish an equilibrium of temperature, and as its vapour is gradually condensed, it also evolves its latent heat. Philadelphia and Pekin, each on the eastern coast of its respective continent, and nearly in latitude 40°, have the same mean annual temperature; whilst on the western coast of the old and the new world, the same annual temperature is found about the 48th parallel. A striking resemblance is thus apparent in tracing the same isothermal line around the northern hemisphere, the east side of both continents presenting concave, and the west side convex summits. Continuing this comparison, it is seen that the climate of the new world, viewed in its general features, is, contrary to common opinion, more mild and uniform than that of the old. Taking, for example, the annual temperature of 53°.60, the eastern coast of Asia shows a difference of 55°.80 in the mean temperature of summer and winter, whilst the eastern coast of America exhibits a difference only of 43°.60; and, on the other hand, the western coasts of Europe and of America present respectively a difference of 28°.30 and 23°. Hence, the fallacy of the opinion which ascribes the mild climate of Europe to the influence of agricultural improvement, becomes at once apparent, when it is considered that the region of Oregon, lying west of the Rocky Mountains, which continues in a state of nature, has a climate less contrasted than that of Europe in similar latitudes, and that consequently it is in a proportionate degree milder than the climate of our own region, in which the labours of man in a few ages have almost wrought miracles, as well as that of the eastern coast of Asia, which has been under cultivation for several thousand years.

says Professor Rostan, "the simultaneous effects of light, heat, electricity, of the winds, &c., on the organic productions of the different zones of the earth, to explore the nature of this earth, to deduce from this knowledge the influence which they exercise on the physical and moral state of man, such is the wide field which climates *present* to our investigation."

The little knowledge that we possess upon these various points, is far from being precise. On the one hand, we are ignorant what constitute the real elements of climate; and, on the other hand, these complex agents act upon living organs still more complex in their functions. Our knowledge heretofore has consisted mainly of the unexplained results of experience. As the subject does not admit of the precision of the exact sciences, the aid of induction and analogy must be invoked. Having once acquired a knowledge of the distinctive characters of different systems of climate and of their effects upon the animal economy both in health and disease, the general laws regulating such influences may be readily ascertained. In the present inquiry, *the temperature of the air, and its hygrometrical state*—agents always supposed to exert a potent influence in the causation of pulmonary and rheumatic diseases—will alone be considered. Although it is necessary, in attempting to determine the relation subsisting between climate and vital action, to take into view the simultaneous influence of all meteorological causes; yet, as caloric is the controlling element in the constitution of climate, modifying its other properties, its laws, it is believed, will give, so far as the present inquiry is concerned, a very correct expression of climatic influence.

As it is intended to illustrate the application of the laws of temperature to the science of medicine, so far as they have relation with pulmonary and rheumatic diseases, it will be necessary to advert to those laws in a general way. In the northern division of the United States, four systems of climate representing two classes may be demonstrated, the one occupying the Atlantic and the Lakes, and the other, the intermediate region and that beyond the lakes. In arranging the medical statistics of the military posts, this classification of them will be adopted, following it up in the Middle and Southern divisions of the United States.

If the phenomena of terrestrial temperature depended solely on the position of the sun, climates might be classified with mathematical precision; but the effects produced by solar heat are so much modified by local causes that the character of a climate can be determined only by observation; and accordingly, the following classification, adopted in the present inquiry, is based upon particular systems of climate as determined by observation:—

General Divisions of the United States.	*Systems of Climate.*	
1. Northern.	1 Class.	Posts on the coast of New England, extending as far south as the harbor of New York.
	2 "	Posts on the northern chain of lakes.
	3 "	Posts remote from the ocean and inland seas.

General Divisions of the United States.		*Systems of Climate.*
2. Middle.	1 Class.	Atlantic coast from Delaware Bay to Savannah.
	2 "	Interior Stations.
3. Southern.	1 Class.	Posts on the Lower Mississippi.
	2 "	Posts in the Peninsula of East Florida.

It is deemed sufficient to give an outline of the peculiarities of these systems of climate, characterized by a greater or less deviation of the isotheral and isocheimal lines from the parallels of latitude. The Northern Division presents the greatest variety of climate. On the sea-coast of New England, the influence of the ocean modifies the range of the thermometer and the mean temperature of the seasons. Advancing into the interior, the extreme range of temperature increases, and the seasons are violently contrasted. Having come within the influence of the great lakes, a climate like that of the sea-board is found; and proceeding into the region beyond the modifying agency of these inland seas, an excessive climate is again exhibited. The variations of the isotheral and isocheimal curves—the lines of equal winter and summer temperature—thus afford a happy illustration of the equalizing tendency of large bodies of water.

The chain of vast lakes or inland seas, lying in the course of the St. Lawrence, it is estimated, embraces an area of 93,000 square miles. Of amazing depth, these ocean-lakes, it has been computed, contain 11,300 cubic miles of water—a quantity supposed to exceed more than half of all the fresh water on the face of the globe.

The modifying influence of the sea-coast compared with the region beyond the lakes, is exhibited in the following table. It presents an average of five years, calculated from the data of two posts in each system of climate, the mean latitude of the posts on the ocean being 43°18′, and that of those in the opposite locality, 43° 10′.

Locality.	Latitude.	Mean Annual Temperature.	Range of the Thermometer			Winter.			Spring.			Summer.			Autumn.		
						December.	January.	February.	March.	April.	May.	June.	July.	August.	Septemb'r.	October.	Novemb'r.
						33.20	24.18	26.45	34.21	44.76	55.37	63.26	68.96	67.43	59.85	50.42	39.73
						25.07	18.82	21.78	34.20	48.05	64.49	75.04	76.81	73.92	60.85	52.92	37.43
Sea-coast	43°18′	47°.19	98	-24	122	27.94			44.78			66.55			50.00		
Region beyond the Lakes	43°10′	48°.99	104	-30	134	21.89			48.91			75.26			50.40		

In the former, the mean temperature of winter is 6°.05 higher than the latter; that of spring is 4°.13 lower; that of summer is 8°.71 lower; and that of autumn 0°.40 lower. This contrast is more strikingly shown by comparing the difference in the mean temperature of winter and summer, it being on the sea-coast 38°.61, and in the opposite locality 53°.37. It is thus apparent, that a classification of climates, having, for its basis mere latitude, is wholly inadmissible; for, although there may be little difference in the mean annual temperature, yet the distribution of heat among the seasons may be extraordinarily unequal.

These facts are still more strikingly illustrated in the following table, which exhibits a comparison between posts on the lakes and those of the same region situated beyond their influence.

Locality.	Latitude.	Mean Annual Temperature.	Range of the Thermometer.			Winter.			Spring.			Summer.			Autumn.		
						December.	January.	February.	March.	April.	May.	June.	July.	August.	Septemb'r.	October.	Novemb'r.
						23.04	16.98	19.85	27.20	39 44	52.56	58.24	67.13	63.51	55.94	47.19	36.33
						18.07	13 74	20.35	31 90	44.81	62.42	71.53	76.49	72 07	58.47	50.81	36 31
Lakes	46°27′	42°.22	93	-26	119	19.96			39.73			62.96			46.49		
Remote from the Lakes	44°53′	46°.47	96	-26	122	17.42			46 38			73.26			48.53		

It thus appears that the winter of the former, notwithstanding it is 1°.46 north of the latter, has a mean temperature 2°.54 higher, whilst that of summer is 10°.40 lower. In the latter, the mean temperature of spring is 6°.65 higher, and that of autumn is 2°.04 higher. The difference in the mean temperature of summer and winter, making due allowance for difference of latitude, is even greater than in the comparison with the Atlantic coast, that of the Lakes being 43°, and that of the opposite locality 55°.84. In the former region, the prevailing weather is cloudy, and in the latter fair; thus, during the year the proportion of days is—

	Fair.	*Cloudy.*	*Rain.*	*Snow.*
Remote from lakes,	216	73	46	29
Lakes,	119	132	67	47

Localities under the influence of the ocean or inland seas, do not exhibit great extremes of temperature, but the air is moist, and the changes of season are slow, uncertain and variable. On the other hand, the climate of localities, removed from such equalizing influences, is characterised by a great range of the thermometer, and a corresponding dryness of the atmosphere; the mean temperature of winter and summer is strongly contrasted, and the seasons change in constant and rapid succession. Other meteorological phenomena are similarly modified by various causes. Thus in countries and seasons, in which solar action is most intense, electrical phenomena are most frequent and energetic; and whilst atmospheric moisture favours the passage of electricity from the earth to the clouds, the opposite condition causes its accumulation in objects on its surface. In the excessive climates just described, thunder and lightning are of rare occurrence, and terrestrial objects are charged with an unusual portion of electricity; whereas in the warm and moist atmosphere of the contrary localities, opposite phenomena are witnessed. The atmospheric dryness of the former pertains more particularly to latitudes above 40°; it is found, however, even in tropical countries remote from the ocean, more especially when high mountains intervene, condensing the moisture wafted by the winds from the sea; and in those regions in which currents of air traverse extensive tracts of arid soil, the dryness is extreme.

It is evident that the annual quantity of rain that falls upon any point of the earth's surface, depending, as it does, upon the amount of evaporation and the prevailing winds, is very intimately connected with the character of climate. The smallest quantity of rain generally falls in February and March, and the greatest amount in July, when the mean monthly temperature is highest. As a general rule, the annual quantity increases in proportion as the equator is approached, more especially in maritime localities and places in which ranges of elevated tracts skirt the sea coast; but as this augmented quantity falls at a particular season, and in a shorter space of time than in colder regions, the annual number of dry days, particularly in inland districts, is proportionally increased. In cold or temperate maritime localities, on the contrary, the rain, although much less in annual quantity, descends much more frequently, but in slighter showers. Consequently, the number of wet, foggy and drizzling days, is much greater than in warm and inland regions.

Conformably to these general laws, it is found that the climatic features of the coast of New England and of the region of the great lakes, exhibit a striking resemblance, whilst those of the third class of the same division are very dissimilar. The most characteristic feature consists in the distribution of heat among the seasons. These results have already been fully detailed. The climate of the third class, comprising the posts remote from the ocean and inland seas, is distinguished from the first two by great extremes of temperature, by seasons strongly contrasted, and a corresponding dryness of the atmosphere. The winters of this class, with the exception of the most southern posts, are characterized by extreme severity. From November to May, cold weather prevails, the ground being generally covered with snow to the depth of three or four feet, and the general range of the thermometer being from the freezing point to 30° below zero. The summers are equally remarkable for extremes of temperature. The heat is often as oppressive as in Florida, the mercury sometimes rising, in June, July and August, to 100°

Fahrenheit in the shade. Unlike the two preceding classes, in which the air is moist, and the changes of the seasons more slow and uncertain, in this one, a constant and rapid succession is observed among the seasons, summer succeeds winter so rapidly that there is scarcely any spring, and vernal vegetation is developed with remarkable suddenness.

We possess no exact measurement of the relative quantity of rain that falls in our different systems of climate; and as no observations have been made upon the hygrometer, their relative degree of humidity cannot be determined. The ratio of fair and cloudy weather, in each system of climate of the northern division has been ascertained. The proportion of rainy and cloudy days on the ocean and the great lakes, it has been seen, is nearly twice as great as in the opposite localities; but there is no regular difference in the mean annual quantity of rain.

In the *Middle Division*, the two systems of climate bear the same meteorological relation towards each other as the third class of the Northern Division does to the first two. Notwithstanding the extremes of temperature are much more modified in the Middle than in the Northern Division, the former is characterized by variableness, whilst in the latter a steady temperature predominates. Jefferson Barracks, near St. Louis, Missouri, shows a greater contrast in the seasons than Washington city; and on comparing Fort Gibson, Arkansas, with Fort Monroe on the coast of Virginia, notwithstanding the latter is 1° 32′ north of the former, a similar result is exhibited.

The *Southern Division* is characterized by the predominance of high temperature. Proceeding South from Canada to Florida, the seasons become more uniform in proportion as their annual temperature increases. This is strikingly illustrated on comparing the difference between the mean temperature of summer and winter at Fort Snelling, Iowa, and at Key West, at the southern point of Florida, the former being 55°.51, and the latter only 11°.34. The peculiar climatic character of this Division is distinguished less by the mean annual temperature than in the manner of its distribution among the seasons. This subject will be further elucidated when the climate of the peninsula of Florida comes under special consideration—a land in which the rigours of winter are unknown, and in which smiling verdure never ceases to reign.

In regard to the remaining elements of climate, such as the admixture of terrestrial emanations dissolved in atmospheric moisture, our positive knowledge is still more limited. This subject, intimately connected with febrile endemics, has little relation to the present inquiry. That mysterious agent—malaria—although too well recognised in its deleterious effects on the human frame, has hitherto remained inscrutable in its nature. Of the two systems of climate, the uniform and excessive, the influence of the latter upon man, breathing a dry, pure, and cool atmosphere, more especially in regions elevated high above the sea, is manifested in his being little subject to severe and malignant fevers; and although pulmonary diseases are more rife than in any other system of climate,* he attains the maximum of the mean duration of human life. On the sea-coast, and the banks of lakes and rivers, or in low and narrow valleys, characterized by a deep, moist and rich soil, abounding with organic remains in a state of decomposition, the air is humid, sultry and relaxing, and loaded with noxious effluvia. The human frame is consequently imperfectly developed, the mortality of children is very great, and the mean duration of life is comparatively low. In the northern and temperate regions, however, maritime places are not less salubrious than inland districts. A locality, somewhat elevated, with an undulating surface, a well cultivated soil, and no marshes in the vicinity, presents the circumstances most favourable to health and longevity.

It is thus seen that there are many circumstances besides mere temperature, which enter into the constitution of climate. Amongst these, as influencing organized beings, one of the most important is the nature of *soil*, the formation of which has apparently been the result of the gradual attrition of the solid materials composing the crust of the globe. As all animals and vegetables, at least all land animals, are dependent for existence on this stratum of comminuted mineral substances and organic remains, its influence in regard, not only to mere health, but the organic modifications which the human frame experiences, constitutes an interesting subject of inquiry.

Having already demonstrated that the regions of the United States on the same parallels of latitude, present systems of climate very diverse in character, viz: 1. The regions bordering on the ocean: 2. Those under the influence of inland seas; and 3. Those remote from such controlling powers: it will be seen that these laws of climate maintain an intimate relation with the etiology of pulmonic diseases. It seems to be a well-established law, that the prevalence of *catarrh* and *influenza* in each *system* of climate, increases and decreases in proportion as the seasons are contrasted, thus maintaining an unvarying relation with the extreme range of the thermometer as connected with the seasons.

The following table presents in a condensed form, so far as regards the *catarrhal* form of pulmonic lesions, the result of the quarterly sick reports of 45 permanent posts, arranged in classes, comprising a period of ten years, the details of which are given in Abstract No. 1† of Appendix:—

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* In the Northern Division of the United States, this law, it will be seen, is limited to catarrh and influenza.

† This abstract contains, besides the result of the permanent stations, that of 31 temporary posts in Florida. It is based on an aggregate mean strength of 47,220 and the period of observation extends from 1829 to 1838 inclusive. It exhibits the condensation of about 1500 quarterly reports of sick, and the mean strength of each post computed from monthly returns in the adjutant-general's office.

Ratio of Catarrhal Diseases.

Divisions.	Systems of Climate.	Latitude.	Diff. between the mean temp. of winter and summer.	Ratio treated per 1000 mean strength.				
				First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.	Annual result.
North'n.	1st Class. Posts on the coast of N. Eng.,	43°18′	38°.61	63	49	36	85	233
	2d Class. Posts on N. chain of Lakes,	46°27′	43°.00	90	62	50	96	300
	3d Class. Posts N. of l. 39°, and remote from the ocean and inland seas,	44°53′	55°.84	175	120	86	169	552
Mid.	1st Class. From Del. Bay to Savannah,	37°02′	32°.99	102	45	23	97	271
	2d Class. South-western Stations, -	35°47′	36°.83	122	61	33	78	290
Sou.	1st Class. Posts on lower Mississippi,*	30°10′	24°.39	92	34	26	60	218
	2d Class. Posts in Peninsula of E. Flor.,	24°33′	11°.34†	45	24	40	33	143
	Total,			689	395	294	618	

These seven classes constitute certain systems of climate, each of which forms the boundary of a specific ratio in relation to pulmonary affections. The three grand divisions are:—1. The *Northern* region of the U. States, in which cold predominates, embraced in the first three classes of the table; 2. The opposite extreme, the *Southern* division, in which a high temperature prevails; and 3. The *Middle* region, the temperature of which vibrates to both extremes.

This table, which exhibits the annual and quarterly ratios of each system of climate, and serves to elucidate their relations and sequences, affords a beautiful illustration of the etiology of catarrhal affections as connected with the meteorological laws established. Take, for example, the northern division consisting of the first three classes:—On the New England coast, as the ocean modifies the atmospheric temperature the annual ratio treated per 1000 of mean strength, is as low as 233; on the great lakes, where a similar modifying influence is in operation, it is 300; whilst the third class, characterized by the extreme range of the thermometer, has a ratio as high as 552. But let us follow more narrowly the isotheral and isocheimal lines, (representing the mean temperature of summer and winter,) which describe four curves within the same space, presenting alternately a *mild* and an *excessive* climate. As these lines, on the coast of the Atlantic, present comparatively little deviation from the terrestrial parallel, the ratio of catarrhal diseases is low; advancing into the interior, the line of equal summer rises and that of winter sinks, and the ratio increases proportionally; proceeding into the region of the lakes, the lines again converge beneath the controlling power of the waters, and the ratio of catarrh and influenza is modified accordingly; again advancing into the interior beyond these ocean-lakes, the average rises in proportion as the isotheral and isocheimal curves tend to opposite directions. In the other grand divisions, the same law obtains. On the Atlantic coast, between the Delaware and Savannah river, the annual ratio is 271,* whilst the average of the interior posts, notwithstanding this class lies somewhat farther south than the former, is 290. As most of the posts of the first class of the southern division are on the Lower Mississippi, and are much under the influence of large bodies of water, the annual ratio is as low as 218; whilst the second class, which comprises the mild, insular climate of East Florida, has an average of only 143.

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* For want of a better arrangement, Augusta Arsenal, Georgia, and Fort Mitchell, Alabama, have been included in this class.

† This result is obtained from the observations made at Key West. At Fort Brooke, Tampa Bay, it is 16°.02.

It would seem then that sudden atmospheric vicissitudes combined with moisture, do not excite a strong susceptibility to catarrhal diseases, else the sea-coast and the lakes should give a higher ratio than the dry and cold atmosphere of the opposite localities. The results, on every hand, afford satisfactory proof that the ratios of these lesions are highest, when the seasons are well marked, producing a decided impression upon the animal economy, and that they are less dependent upon daily variations of temperature than upon its extreme range as connected with the seasons.

In regard to the climate of the United States, the rule holds good, that wherever the seasons are violently contrasted the ratio of catarrh and influenza is highest, decreasing in proportion as the difference in the mean temperature of summer and winter grows less. Thus the ratio on the northern chain of lakes is little more than half as high as in the adjoining localities removed from the agency of large bodies of water; and accordingly, we find that the mean winter temperature of the latter, in the same latitude, is three degrees lower, and the summer temperature ten degrees higher, than the former, whilst the difference in the mean temperature of winter and summer is at least 16° less on the Lakes. Although we possess no exact measurement of the relative quantity of rain which falls in these two positions, nor any precise hygrometic observations; yet we know that the atmosphere of the lakes is much more moist, as the number of rainy and cloudy days is nearly twice as great as in the opposite locality.

Here then are several laws established in meteorology as applied to the etiology of disease. But let us test, by a further application of the principles, the universality of these physical laws. As the *middle* division is subject to the extremes of the northern and southern latitudes, so it is found to be prolific in pulmonic lesions in general. The result of eight military stations, (the 1st class of the middle division,) situated on the sea-coast and inlets between the Delaware and Savannah, gives an average of catarrhal diseases higher than that of the northern coast, where cold prevails, as well as that of more southern latitudes, in which a higher temperature predominates.

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* In this class, Fort Monroe, and in the first class of the northern division, Fort Independence have been excluded, for reasons to be given in the sequel.

The annual ratio of the middle coast being higher than either extreme, let us see whether it bears the usual relation with the interior region of the same latitude. This refers to the south-western posts, of which Jefferson Barracks, lat. 38° 28′, is the most northern, and Fort Jesup, lat. 31° 30′, is the most southern point. True to the general law developed, we find that the ratio (290 to 271) is in accordance with the augmented difference in the mean temperature of summer and winter.

Before proceeding to the *Southern Division*, it will be necessary to remark that the statistics of Fortress Monroe, on the coast of Virginia, which seems to be under the influence of no ordinary laws, have been excluded in the calculation of the class to which it belongs. The ratios of catarrh and influenza per 1000 of strength, compared with the eight other posts of this class, stand as follows:—

	1st Quarter.	*2d Quarter.*	*3d Quarter.*	*4th Quarter.*
Fortress Monroe.	225	146	94	339
Remaining Posts.	102	45	23	97

It is thus seen that the averages are from two to fourfold higher than the mean ratios of the other posts of the same system of climate. Although the results are extraordinary, yet the influence of the seasons is strikingly manifest. The statistics of this post embrace a period of nine years; and whilst the nine fourth quarters, with an aggregate mean strength of 2625, give a total of 774 cases of diseases of the respiratory organs, 426 cases are reported in one of these quarters, with a mean strength of 609. Of these cases, 372 are registered as "Epidemic influenza," which continued to prevail until the following April. In the first quarter of this year, (1832) 259 cases of pulmonary disease are reported, 219 being "epidemic catarrh," in a command of 570 men; and in the second quarter, in a mean strength of 352, 154 pulmonic affections are reported, (126 being of the epidemic form,) most of which occurred early in the quarter. As these facts, however, are insufficient to explain the general result, much may have been owing to the agency of local causes; for example, the dampness of the men's quarters, which were in the casemates between the ditch of the Fort and the water of the Bay. On reference to Abstract No. 1, of Appendix, it will be seen that the contrasts are equally great in regard to pleuritis and pneumonia. It may be added that a large proportion of the deaths have arisen from this class of diseases. During the nine years, 102 deaths are reported in the medical returns, among which are 17 phthisis pulmonalis, 4 pneumonia, 3 pneumonia typhoides, 4 influenza, and 1 engorgement of the lungs. The average mortality from pulmonary diseases is about twice as high as at the remaining posts of this class.

The *Southern Division*, consisting of two classes, remains to be examined. The annual ratios of both these systems of climate are lower than that of any other. The first class of this Division is little removed from the second of the *middle* division in point of latitude; but, owing to the modifying agency of the Gulf of Mexico, and the large lakes in the region of the Lower Mississippi, it holds an intermediate relation in respect to the southwestern stations, and the climate peculiar to the peninsula of Florida. These annual ratios are as follows—290, 218 and 143. As the climate of East Florida is the most mild and equable, possessing all the advantages of the most favoured insular regions, so it presents the lowest average of catarrh and influenza.

The numerical results thus far obtained have been not in the least anticipated. If to enter upon an investigation free of preconceived opinions may be considered a merit, the claims, in the present instance, are still greater, inasmuch as the views of the writer were diametrically adverse to the conclusions warranted by the data; for we believed, with the rest of mankind, that the atmospheric moisture and sudden vicissitudes of temperature ascribed to positions on lakes and the ocean, exercise a greater agency than the dry and less variable climate of the interior, in the production of catarrhal diseases. Content to observe facts and to trace their relations and sequences, the author has essayed to be a faithful interpreter of nature; and as it is a leading principle of the inductive philosophy, to *ascertain the universality of a fact*, these researches will now be continued in a new direction.

Having obtained thus far unvarying results in regard to the annual average, I shall proceed to an investigation of the quarterly ratios as illustrative of the influence of the seasons. Having determined elsewhere the relative agency of the seasons in the causation of intermittent fever throughout the United States, I am enabled to say that catarrhal affections acknowledge this influence in a still more eminent degree. A single glance at the table of the "*Ratio of Catarrhal Diseases*" (p. 21,) will afford a satisfactory explanation. It will be seen that the ratios of the first and fourth quarters, in obedience to a general law, are always the highest, and that the third invariably presents the lowest average. The second class of the Southern Division, which exhibits an apparent exception to this rule, the third quarter having a higher ratio than the second or fourth, it will be found, illustrates the ancient axiom—*exceptio probat regulam*. As the Peninsula of Florida affords no marked distinctions of seasons, as will be shown more fully, it follows that amongst the causes which determine the prevalence of catarrhal lesions, those that are secondary in the other systems of climate, become in this the primary ones. Finally, the aggregate of each quarter, which gives a fair expression of the relative influence of the seasons in the etiology of catarrh and influenza throughout the United States, as shown in the same table, affords satisfactory demonstration of the general laws developed. These ratios stand as follows;

1st Quarter.	*2d Quarter.*	*3d Quarter.*	*4th Quarter.*
689	395	294	618

These facts having been determined, the advantage of a winter residence in a more southern latitude to a person labouring under *chronic bronchitis*, becomes at once apparent. If he can avoid the transition of the seasons—that meteorological condition of the atmosphere, which stands first among the causes which induce catarrhal lesions, he will do much towards controlling his malady. Let us suppose him on the coast of New England, in the 3d quarter, the ratio being as low as 36, when the sudden transition of the season brings it up to 85. The consequences will inevitably be an aggravation of that disorder to which he is predisposed; for the respiratory organs, even when healthy are peculiarly susceptible, at this season, to abnormal action. Let us, on the contrary, suppose him gradually moving south with the change of the season, and the 4th quarter will find him in a climate whose ratio is even lower than that of the preceding quarter in the region which he had left. On the coast of New England, the ratio of the 3d quarter is 36, and that of the fourth is 85, whereas the average of the latter quarter in peninsular Florida is only 33. These are not isolated facts, but uniform results obtained from ten years' observation. As the same law obtains in every system of climate, it is easy to apply the remedy.

The assemblage of morbid phenomena, usually designated by the term *consumption* or *phthisis pulmonalis*, it is well known, may arise from various pathological conditions of the respiratory organs. In a practical point of view, it is important to discriminate these several affections. Varying much in the degree of sanability, it is generally conceded that that form of consumption which depends upon chronic bronchial inflammation, is by far the most under the control of remedial management. Recoveries are not uncommon in those cases in which the mucous tissue remains free from ulceration, or the subjacent pulmonic structure has not become consolidated.

As regards the advantages of change of climate, it will be observed that reference is made only to *chronic bronchitis* as a natural consequence, notwithstanding the inference, that similar effects, reasoning from analogy, would follow in other forms of consumption, might be warranted. As it is, however, the catarrhal or pituitous consumption of authors that probably constitutes the majority of the reputed cases of phthisis pulmonalis in northern latitudes, and as this is the only form that can be really considered remediable, the importance of determining the comparative influence of season and climate in relation to catarrhal lesions, becomes more strikingly manifest.

As the doctrines maintained are conclusively established, a further discussion were useless. But this subject, at the present day, is invested with more than ordinary interest, by reason of the conclusions deduced from the "Statistical Reports on the Sickness, Mortality and Invaliding" among the British troops stationed in every quarter of the globe. In regard to *phthisis pulmonalis*, the reporter shows by numerical results, that it is more prevalent in southern than northern latitudes, and that it is "*by no means likely that any beneficial influence can be exerted by climate itself*" in pulmonary affections. The conclusion that pulmonic lesions, as regards the annual ratio, are more prevalent in certain *systems* of climate in southern than northern latitudes, is confirmed by the statistics of the United States army; but as we proceed in the investigation of this question, in relation to the relative influence of the *seasons*, the general opinions in regard to change of climate in pulmonary affections, maintained since the days of Hippocrates, will be triumphantly established. Major Tulloch, in his able reports, has in some measure, set the world right in regard to a *theoretical* error, but has, unfortunately led it, at the same time, into a *practical* one.* It is thus seen that his deductions are vitiated by the radical error of basing them on the *annual* results without reference to the influence of the *seasons;* and, did space permit, it were easy to show that the inferences deduced from his numerical results are, in many instances, unwarranted, as he has fallen into the error not only of taking the mean of the averages given by the stations of a command, but into that of comparing the lowest average in one command with the highest in another.

It is not, however, pulmonary diseases alone that augment and diminish with the varying seasons—a fact established by the result of statistical data. The prevalence of a specific disease, or a class of diseases, constitutes a morbid *diathesis*, which modifies the character of all other lesions. In our northern and middle States, pulmonary diseases constitute the prevailing *diathesis* in the first and last quarters of the year, whilst, in the second and third quarters, the ratio is not more than one third as high as the average given by the diseases of the digestive organs. An invalid labouring under chronic bronchitis is, therefore, on the accession of the fourth quarter, doubly subject to renewed attacks; whereas by going south in the latter part of the third quarter, he leaves a region in which diseases of the digestive organs are the reigning lesions, and enters another of the same character; and as his system has not been acted upon by the long continued heats of a southern summer, he is less susceptible than the residents, to the influence of those causes which induce pulmonary affections. The pulmonic of the south, to enjoy the full benefit of his own climate, must, therefore, spend his summers in more northern latitudes. In Florida, malarial diseases constitute the morbid diathesis in every season; and if the old idea, that the air of a marshy country is beneficial in consumption, be but partially true, then, indeed, must this climate be an infallible remedy. It will be seen, however, that among northern troops, stationed at the south through all seasons, consumption of a tubercular nature frequently supervenes upon febrile diseases, more especially in constitutions broken down by intemperance, standing in the relation of those other sequelæ—dropsy, jaundice, and the various chronic lesions of the viscera.

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* The opinion that it is worse than useless to visit southern regions in pulmonary diseases, has been very generally embraced on the strength of these statistics. The following extract from the Med. Chirurg. Review, may be given as an example:—These reports "*have given the death blow to the expatriation of invalids affected with pulmonary alterations.* They serve also to show us the salubrity of our calumniated climate, and to lower our aspirations for that 'sweet south,' whose sunny skies and luxuriant plains too commonly smile but to betray. Statistics dispel those illusions of poesy, and even prove that consumption, the reproach of our fickle seasons, lurks as fatally in the balmy Italian zephyr, or the sultry tropical breeze."

I have thus concluded the investigation of catarrhal diseases in reference to the agency of season and climate; and the results, it is conceived, demonstrate conclusively the advantage of a winter residence in the peninsula of Florida in cases of *chronic bronchitis.* In endeavouring to determine, by ordinary observation, the influence of meteorological causes in relation to disease, the difficulties of the inquiry are very great, owing both to the complexity of the agents concerned and that of the organs and functions upon which they act. Independently of incidental miasmata, whether gaseous admixtures, animal or vegetable products, or other agents still less within our knowledge, this inquiry naturally divides itself into four heads—viz: *The Temperature of the Air—Its Hygrometrical Condition—Its Weight—and Its Electrical State and Changes.* The agency of winds may be referred, in a great measure, to some one of these conditions. Although little has been done to determine the influence of light, yet seeing what has been effected by science in expounding the physical conditions through which this great agent operates, and its effects, for example, on the growth and economy of plants, many of its relations to the body, there is reason to believe, will be hereafter ascertained. The present inquiry embraces in its scope the temperature of the air and, in some measure, its hygrometrical state. Although we feel these various agents to be in perpetual operation, yet it is singular how little real knowledge has been gained in relation to their connection with disease, The difficulty of the research is mainly enhanced by the circumstance that none of these conditions act singly upon the living body; and to meet the perplexity of these questions, meteorology, which is itself only taking a place among the exact sciences, has not yet accomplished much. To determine these laws, the personal observations of a single individual cannot be of much avail. It is only by extending these observations through a series of years and over vast masses of individuals, upon the principle of the numerical mode of analysis, that correct conclusions can be attained. It has just been seen that by the application of the doctrine of averages, important relations have been disclosed discoverable in no other way. The progress of physical science, it is thus seen, is ever lending fresh aids to that of pathology; and judging from the character of the results now developed, a favourable augury of the future, as the range of meteorological science, aided by new instruments, is being enlarged, is justly warranted.

I shall now proceed to the investigation of the laws which obtain in regard to *pleuritis and pneumonia.* As these lesions, it is very probable, are dependent upon the same metereological causes, the results will be investigated conjointly. In abstract No. 2 of Appendix, the relative prevalence of each is exhibited. The following table presents the quarterly and annual ratios of pleuritis and pneumonia in each system of climate:—

Ratio of Pleuritis and Pneumonia.

Divisions.	Systems of Climate.	Ratio treated per 1000 of mean strength.				
		First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.	Annual Results.
North'n.	1st Class. Posts on the coast of New England, -	12	11	8	10	41
	2d Class. Posts on Northern chain of Lakes, - -	11	15	13	11	49
	3d Class. Posts north of lat. 39°, and remote from the ocean and inland seas, - - - - -	14	11	7	12	45
Mid.	1st Class. Coast from Delaware Bay to Savannah, -	21	11	8	16	57
	2d Class. South-western Stations, - - - -	46	18	10	20	92
Sou.	1st Class. Posts on the lower Mississippi, - -	20	9	4	11	47
	2d Class. Posts in the Peninsula of East Florida, -	14	9	8	6	39
	Total,	138	84	58	86	

It hence appears that the laws in regard to pleuritis and pneumonia, as expressed by the numerical results, differ, in some points, from those peculiar to catarrhal diseases. In the three classes of the Northern Division, the modifying agency of the ocean and lakes, is not manifested in the results. In the other systems of climate, the laws are the same as in catarrhal affections; thus, the difference between the two classes of the middle division is very striking, whilst those of the southern division exhibit a remarkable decrease in the annual ratio. An examination of the quarterly averages as illustrative of the influence of the seasons, compared with catarrh and influenza, will also show some variation. In the first three classes, notwithstanding the third quarter is the lowest, the agency of the seasons is not very manifest. In all the others, the difference is very striking; and in taking the total of each quarter, which affords a fair expression of the relative agency of the seasons in the causation of pneumonia and pleuritis throughout the United States, it is found that the law is the same as in catarrhal diseases, the first and fourth quarters presenting the highest, and the third, the lowest average. Thus:—

1st Quarter.	*2d Quarter.*	*3d Quarter.*	*4th Quarter.*
138	84	58	86

In these calculations, Forts Monroe and Independence have, as before, been excluded. On reference to Abstract No. 2 of Appendix, the relative prevalence of these diseases at each of these posts may be seen. At Fort Independence, the total of pleuritis and pneumonia is eight times as high as that of catarrh, whilst the ratio of the former is nearly twenty times as high as that of the remaining posts of this class. As but one death is reported among 261 cases of pleuritis and pneumonia, it is reasonable to presume that a great majority belonged to the class of catarrhal affections.

From the table just given, it appears that the average of pleuritis and pneumonia is much lower in the cold and variable climate of our northern and eastern States than in the middle and southwestern regions of the United States. At the southwestern posts the annual ratio is 92, whilst on the coast of New England it is only 41. In catarrhal affections, the same law obtains so far as the New England coast is concerned; but the second, and especially the third class of the northern division exhibit contrary results. It has been seen that catarrhal lesions in every system of climate obey the law in respect to extremes of temperature as connected with the seasons. In pleuritis and pneumonia, this law receives some modification; for example, the third class, comprising the posts in the northern division, remote from the ocean and inland seas, has a ratio only half as high as that of the southwestern stations. At Fort Snelling, Iowa, in the former class, the difference in the mean temperature of winter and summer, is 55°.51; whilst at Fort Gibson, Arkansas, in the latter, it is only 36°.83. In the former, the summers, although the mercury rises very high, are short; but in the latter the summer heats are both great and long continued. It would seem to be a law that in proportion as the high temperature of summer makes an impression upon the system, do the lungs become susceptible to the morbific agency of the opposite seasons. In the northern division, for example, as cold predominates, and no decided impression is made upon the animal economy by the short summer, the annual ratio of pleuritis and pneumonia is not only low, but there is little difference in the ratios of the seasons; on the other hand, at the southwestern posts, remarkable for high and long continued summer heats, the annual ratio is about twice as high as in the northern States, whilst the difference in the seasons is very considerable, the ratio of the third quarter being less than one ninth of the annual average. This contrast is rendered still more striking by the fact, that whilst the ratio of the first quarter is nearly four times higher at the southwestern than at the northern posts, there is no difference in the averages of summer. At Fort Gibson—a point at which the mercury rises higher than at any other post in the United States, the averages stand thus:—First quarter 71; second quarter 19, third quarter 9, fourth quarter 15, the annual ratio being 112. On comparing the southwestern stations with the corresponding posts on the Atlantic, the general law in reference to the modifying agency of the ocean is strikingly manifested. In the first class of the southern division, as the seasons grow less contrasted, the annual ratio decreases materially; and lastly, in the remaining class (East Florida), in which, for example, at Fort Brooke and at Key West, the difference in the mean temperature of winter and summer is respectively only 16°.02 and 11°.34, the lowest average is presented. It is thus seen that in regard to pleuritis and pneumonia, it seems necessary to consider not only the degree of contrast in the seasons, but the duration of high temperature. Leaving out of view the three classes composing the northern division of the United States, the law is precisely the same as in catarrhal lesions.

The subject of *phthisis pulmonalis* will next engage attention. The quarterly and annual averages, in each system of climate, are shown in the annexed table:—

Ratio of Phthisis Pulmonalis.

Divisions.	Systems of Climate.	Ratio treated per 1000 of mean strength.				
		First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.	Annual Results.
North'n.	1st Class. Posts on the coast of New England, -	2	3	2	3	9[*]
	2d Class. Posts on Northern chain of Lakes, - -	3	2	2	2	9
	3d Class. Posts north of lat. 39°, and remote from the ocean and inland seas, - - - - -	2	1	1	1	5
Mid.	1st Class. Coast from Delaware Bay to Savannah, -	4	5	2	3	13
	2d Class. South-western stations, - - - - -	3	3	4	2	11
Sou.	1st Class. Posts on the lower Mississippi, - -	3	3	2	2	9
	2d Class. Posts in the Peninsula of East Florida, -	2	2	2	2	9
	Total,	19	19	15	15	

It would not appear that any general laws can be deduced from these numerical results. In the northern division, the average of the third class, contrary to the general results of the class of diseases of the respiratory organs, is much the lowest: but this difference is more apparent than real, from the circumstance that nearly all the fatal cases of consumption in this division are ascribed to the abuse of ardent spirits. In the third class, for example, were the results of West Point, a command consisting mainly of officers and cadets, excluded from the calculation, the annual ratio of cases per 1000 rises nearly to 7; and the difference still existing is doubtless owing to the greater facility of obtaining, at the posts along the sea-board, inebriating potations. It is more than probable that the ratio of chronic bronchitis, follows the laws which obtain in respect to catarrhal lesions; but in regard to phthisis pulmonalis in general, these laws cannot be recognised. It is an important fact that whilst the averages of catarrh and influenza, pleuritis and pneumonia, in the first class of the middle division are reduced nearly 50 per cent. by excluding Fort Monroe, the ratio of phthisis pulmonalis is increased. It confirms the opinion that this disease, although much under the influence of season and climate, is still more, especially among troops, under the control of other agents. As all causes by which the energies of the human frame are sapped, conduce to the development of the tubercular form of consumption, so northern constitutions exposed to the chronic diseases and debilitating heats of a southern latitude, acquire a peculiar susceptibility. In systems broken down by habits of intemperance, it is very apt to supervene upon certain chronic affections, as the sequela of remitting and intermitting fever, diarrhœa, &c. Facts of this kind having relation to the annual results, without reference to the influence of the seasons, it has been seen, led the British reporter into the erroneous conclusion that no change of climate is beneficial in any form of consumption.

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[*] As fractions are not given, and as the mean strength of each quarter varies, the annual results do not always correspond with the total of the quarterly ratios.

The *annual* results in regard to the class of pulmonary diseases, as well as the mortality from each, now come under investigation. As the cause of every death is not specified in the quarterly sick-reports, a correct result in respect to the mortality can only be approximated. The total of deaths given in the following table are those only which occurred among men on the sick list—a ratio considerably lower than that of the post returns which include the deaths from all causes:

Northern Region of the United States.	Mean Strength.	Ratio of cases per 1000 of mean strength.					Deaths.						
		Catarrh and Influenza.	Pneumonia.	Pleuritis.	Phthisis Pulmonalis.	Total.	Catarrh and Influenza.	Pneumonia.	Pleuritis.	Phthisis Pulmonalis.	Hæmoptysis.	Total per Medical Returns.	Causes not specified.
Atlantic Posts, - - - -	3130	233	22	26	9	290		1		15		140	16
Posts on the Lakes, - - -	5973	300	19	30	9	358	1	4		9		65	12
Posts remote from the ocean and the Lakes, - - - -	12604	552	17	28	5	602		3	1	22	1	119	16
Total,	21707	439	18	28	7	490	1	8	1	46	1	324	44
Southern Region.													
Coast from Delaware to Savannah,*	3199	271	25	32	13	341		1	1	19		196	18
South-western Stations, - -	11140	290	39	52	11	392		31	2	61	2	458	75
Posts on the lower Mississippi, -	3381	218	22	28	9	277		2	2	10		178	30
East Florida,	4607	143	15	24	9	191			1	9		131	17
Total,	22327	246	29	40	10	326		34	6	99	2	963	140

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* Fort Monroe, as before, so far as pulmonary diseases are concerned, is excluded from this class. There are reported 102 deaths, of which 4 arose from influenza, 8 from pneumonia, and 17 from phthisis pulmonalis.

It is thus seen that, with the exception of catarrh and influenza, the annual ratio of pulmonary diseases is lower in the northern than in the southern regions of the United States. It is in the middle districts of the United States, however, that pneumonia, pleuritis, and phthisis pulmonalis, are most prevalent, the peninsula of Florida having a lower average than any other region. It is found too, that the same law obtains in regard to the mortality arising from this class of diseases, the deaths per 1000 of mean strength being as under:—

	Phthisis Pulmonalis.	*Pneumonia, pleuritis, and catarrh.*
Northern Region.	2.1	0.5
Southern "	4.4	1.8

For the purpose of comparison, these results are deemed sufficiently accurate; but it is necessary to mention, as appears by the table, that among the deaths in the Northern Region, the causes of about one eighth, and in the Southern, the causes of one-seventh are not reported. It is known, however, that the majority of the deaths, the causes of which are not specified, belongs to the class of casualties.

The high mortality of the southern regions is caused by the Middle Division of the United States, the average on our southern coast being comparatively low. Taking the statistics of the posts in East Florida, and those on the Lower Mississippi, the ratio of phthisis pulmonalis is found to be only 1.7, and that of the remaining lesions of this class to be no more than 0.7 per 1000 of mean strength. It is also ascertained that these diseases are of a more fatal tendency in the Southern than in the Northern Regions. In the latter, the ratio of mortality from phthisis pulmonalis is 32, and in the former, 42 per hundred cases; and as regards pleuritis and pneumonia, the difference is much greater, the average mortality in the Northern being 9, and in the Southern, 26 per thousand cases. It is necessary to add, however, that this high mortality is limited to the south-western posts, 33 deaths, (out of 40—the total of the four southern classes,) being reported in this class.

These statistics then show that as regards pneumonia, pleuritis, and phthisis pulmonalis, the ratio of cases and deaths is greater in our middle regions, including the south-western stations, than at either extreme. In endeavouring to account for this result, much may, perhaps, be due to the circumstance that the subjects are generally from the Northern States, or from Europe. It may be safely asserted, as has been already remarked, that the majority of cases of consumption at our southern posts supervene upon febrile diseases, more especially in constitutions broken down by intemperance, bearing the same relation to fevers as those other sequelæ—dropsy, jaundice, and the various chronic lesions of the viscera. On the Lower Mississippi—a class of posts which presents the highest mortality—the average of phthisis pulmonalis is low, owing very probably to the circumstance that fevers are of the most fatal tendency, terminating either in speedy death or rapid recovery. At the south-western stations, and those along our middle coast, the malarial poison acts more slowly, thus developing, by a gradual deterioration of the constitution, a tubercular form of consumption. It follows then that a continuous residence in the south, so far from being beneficial in this disease, will often hasten its fatal issue. This fact does not, however, in the least militate against the doctrine which maintains that advantage will be derived from change of climate in the way of a winter residence; and so far as regards the propriety of the measure in *chronic bronchitis*, no reasonable doubt can be entertained.

Reference has already been made to the British army statistics, the results of which, it is alleged, show "a striking contradiction to the popular idea" in relation to pulmonary diseases. The conclusion of the reporter that this class of diseases is more prevalent in southern than northern latitudes, it has been seen, is the result of hasty generalisation. It has been demonstrated, for example, that the prevailing low temperature of the coast of New England, and the predominating high temperature of our southern coast, present each a lower ratio than the variable climate of the intervening region, characterized by the extremes of both. Having averred that the reporter's deductions are in many respects unwarranted by the numerical results, a proper respect for the opinion of others, more especially when emanating from high authority, requires, so far as the limits of this paper will admit, a statement of the general grounds upon which this declaration rests.

England has been assumed as the standard of comparison. Now, it is well known that the range of the thermometer is not greater in England than in Italy, and that the difference in the mean temperature of summer and winter is actually less. In regard to the difference of winter and summer, the ratios stand thus:—Penzance 15°.84, Edinburg 17°.90, London 23°.20, Italy 27°.26 and southwest of France 26°.42. In our own country, the results are very different, as Fort Snelling, Iowa, 55°.51, Fort Brady, Mich., 40°.87, Washington city 38°.98, Jefferson barracks, Missouri, 41°.17, Fort Gibson, Arkansas, 36°.83, Augusta Arsenal, Georgia, 30°.55, Fort Brooke, Florida 16°.02, and Key West 11°.34. As the summer heats of England never rise so high or are so long continued as to render the animal economy very susceptible to the influence of the opposite conditions, it follows that the ratio of pulmonic lesions must be low. When this fact is taken in connection with another just developed, viz; that positions bordering large bodies of water, by which the extremes of temperature are moderated, whilst the air is moist and the seasons characterized by variableness, exhibit a lower ratio of pulmonary diseases than localities under opposite circumstances, the selection of England as a standard of comparison, illustrates strongly the impropriety of basing a classification of climates on mere latitude.

The reporter takes the ground that a comparison of the ratio annually attacked out of a given number in different countries, presents the most accurate method of determining the relative agency of climate in the causation of particular diseases, more especially if these investigations extend over a long series of years, and include large masses of individuals. Now, this remark is true, provided the comparisons, unlike the various British commands, are instituted among the natives of each region.

The reporter has fallen into the error of comparing the *lowest* average in one command with the *highest* in another, by which all his deductions in reference to pulmonary diseases have become vitiated. The fallacy of the conclusion that pulmonary consumption is more prevalent and fatal in the West Indies than in England, appears from the single fact that he dwells particularly upon a comparison of the results afforded by the Windward and Leeward command of the former, and the Dragoon guards and Dragoons of the latter, thus assuming, on the one hand, the *highest*, and on the other, the *lowest* mortality as comparative averages. The high ratio of the Foot Guards in England is set aside as "an exception," because it appears "attributable to other causes than the climate of the metropolis," whilst that of the Windward and Leeward command stands forth in bold relief, notwithstanding he thinks it "not attributable to climate only, but also to some peculiarity from which officers are exempt." Taking the aggregate strength and aggregate mortality from diseases of the lungs of all the white troops in the West Indies and of all the commands in the United Kingdom, the result is in favour of the former. Were even the mortality higher than in England, it would not be surprising; for here are men, from a foreign land, exposed, through all seasons, to a continuous high temperature. As pulmonary consumption, in hot climates, is doubtless often induced by the deterioration which the constitution, especially in cases of intemperate habits, undergoes from repeated attacks of febrile and dysenteric lesions, a prolific source of mortality is presented in the West Indies. As the prevailing idea in regard to the advantages of acclimatization is disproved by statistical investigations, not only in the West Indies, but all other climates in which British troops are stationed, it follows that the causes assumed as exercising a powerful agency in the production of phthisis pulmonalis, in proportion as the conservative powers of the constitution give way, are uniformly progressive in their fatal tendency.

At first view, the advantage of a winter residence in the West Indies to a pulmonary invalid, may seem problematical; but this deception vanishes when we call to mind the fact that these diseases, as a class, are more under the influence of the seasons than intermitting fever. A continuous residence in these islands would no doubt hasten the fatal issue in a case of tubercular consumption, but the objections on this score are wholly limited to the summer season. Although the reporter remarks on "the baneful influence of the climate of the West Indies in accelerating the progress of consumption," yet it is found that the annual ratio of mortality from hæmoptysis and phthisis pulmonalis is only 6.1 per 1000, exclusive of those sent home as invalids, whilst that of the United Kingdom is 8.2. Now could we institute a comparison between the civil population of England and the natives of the West Indies, correct results might be obtained.

If we compare the ratio given by all the commands in England with that of the Mediterranean commands, Gibraltar, Malta and the Ionian Islands—the result, contrary to every conclusion of the reporter, is decidedly favourable to the latter. In the United Kingdom, the annual ratio of mortality from hæmoptysis and phthisis pulmonalis is 8.2 per 1000 of the strength; whilst at Gibraltar it is only 3.6, at Malta 3.7, and at the Ionian Islands 2.9, but as some consumptive patients in the Mediterranean commands were invalided, these ratios are somewhat too low. In regard to the civil population of Malta, the reporter adds:—"Nor is the fatal influence of diseases of the lungs confined to the troops alone; it extends in a corresponding degree to the inhabitants." It will be observed that deaths are reported by the Maltese medical practitioners under the different heads of consumption and phthisis pulmonalis. "The former," the reporter says, "is understood principally to refer to that class of consumptive cases more generally designated *marasmus*, which term has been adopted in the returns since 1831. They are understood to have occurred *principally among children and old persons*." Not content to include under the class of diseases of the lungs the cases of marasmus reported as consumption prior to 1831, he also takes those *reported as marasmus* subsequently to that period. Excluding the cases of marasmus, the ratio of mortality from hæmoptysis and phthisis pulmonalis is reduced to 1.1, and that from all diseases of the lungs, to 3 per 1000. The fatality of pleuritis and pneumonia is not half so great as among the troops. Consequently, the mortality from all diseases of the lungs among the civil population is not more than half as high as among the troops, and not one third as great as the average of the several commands in the United Kingdom. As truth never lies in extremes, so the ratio of hæmoptysis and phthisis pulmonalis, including *one half* of the cases of marasmus, is 2.2, which is much lower than among the military, and only one-fourth of the average in England.

This view of the results of the several Mediterranean commands, leads to conclusions diametrically adverse to those deduced by the reporter. So far from the climate being unfavourable to persons predisposed to pulmonary diseases, it is satisfactorily shown that it is even advantageous as a continuous residence. Hence, to the pulmonic invalid of more northern latitudes, who seeks this climate merely as a winter retreat, the beneficial results must be incalculable. Were even the correctness of the reporter's deductions admitted, it would not militate against the principles established in relation to the influence of the seasons. In no event, then, can the pulmonic of England be in error, in visiting the Mediterranean as a winter residence.

In Nova Scotia and New Brunswick, as well as in Upper and Lower

Canada, the ratio of admissions and deaths from diseases of the lungs is considerably below that of the United Kingdom. As this is a region in which cold predominates, the result is no ways surprising; for, notwithstanding "the variation sometimes exceeds 50° in the course of a few hours," it is in harmony with, and thus confirms the laws established in relation to, the systems of climate pertaining to the United States.

The results given by Major Tulloch's latest statistical Reports "on the sickness, mortality, and invaliding among the troops in Western Africa, St. Helena, the Cape of Good Hope, and the Mauritius," afford no confirmation of his favourite views in regard to pulmonary diseases. We are told, for example, "that among 71,850 native troops serving in the Madras Presidency, the deaths by every description of disease of the lungs did not, on the average of five years, exceed *one per thousand* of the strength annually. Here then, unlike the island of Malta, is presented a fair standard of mortality from all pulmonary diseases among native troops; and compared with the ratio of Great Britain, it is found to be only one-tenth as high. On the western coast of Africa, the ratio of mortality from diseases of the lungs among British troops, is 4.9 per 1000, in St. Helena 3.2, and at the Cape of Good Hope 3.9, whilst at the Mauritius, the average is nearly twice as high as the last. As the ratio of the United Kingdom is 10.1, these results, like all others, are much in favour of southern latitudes. The ratio of admissions by the class of pulmonary diseases is much the same at the Cape of Good Hope and the Mauritius, the great source of mortality in the latter arising from consumption. This fact confirms the oft-repeated opinion, that the ratios of phthisis pulmonalis in general and the other diseases of the lungs have no apparent relation.

These general conclusions are confirmed by statistical facts in a recent edition of M. Laennec's work, edited by M. Andral. It is found that phthisis, as in the middle regions of the United States, is much more frequent in the temperate regions of Europe, comprised between the 55th and the 45th degree of latitude, than it is further to the north. Whilst in London it is calculated that 236 of every 1000 deaths is caused by pulmonary phthisis, in Sweden the ratio is only 63. At St. Petersburg and Stockholm, it is much less destructive than throughout Germany, and more especially at Berlin, Munich, Vienna, and Paris. In the southern parts of Europe, from the 45th to the 35th parallel, it is still found to be a very common disease. That a cold temperature is not essentially *per se* favourable to the developement of phthisis pulmonalis, as well as pleuritis and pneumonia, seems, therefore, an established point.

No attempt is here made to analyze critically the results of the British statistics, but rather to adduce the foregoing facts in confirmation of the doctrines established in reference to the systems of climate pertaining to the United States. In the British Commands investigated, the reporter had to deal entirely with regions characterised by a mild insular climate, or those in which a low temperature predominates; and as the contrasted seasons of an excessive climate like ours was not brought under his observation, his means of arriving at truth were restricted. Even when referring for illustrations to the countries of other nations, he falls into a like error; for when discussing the climate of Malta in relation to pulmonic affections, he refers to Sweden as a region which ought to afford opposite results. Now had returns from the middle regions of Europe fallen into his hands, the deductions, it has just been seen, would have been widely different. And here again, we have meteorological facts that afford mutual corroboration. Moscow, for example, in lat. 56°, according to Humboldt, has the same mean summer temperature as Loire in France, in lat, 46°; and in Scotland, in lat. 57°, the winters are more mild than at Milan, in lat. 45° 28.'

As *rheumatism* pertains to that class of diseases for which a winter residence in southern latitudes is often recommended, a few inquiries in regard to its etiology will be instituted. This subject, like the preceding one, is of such a nature that the experience of the civil practitioner is on too limited a scale, and too immethodical in its character, to warrant general conclusions, and although generally unsafe to disagree with mankind in matters of daily observation, yet it would not be surprising were the commonly received opinions upon a question of such magnitude, to prove, when submitted to the test of numbers, to be founded in error. The following table, condensed from abstract No. 1 of Appendix, exhibits the annual and quarterly ratios of rheumatic cases, treated per 1000 of strength, on an average of 10 years, in each system of climate:—

Ratio of Rheumatic Diseases.

Divisions.	Systems of Climate.	Ratio of cases per 1000 of strength.				
		First Quarter.	Second Quarter.	Third Quarter	Fourth Quarter.	Annual Ratio.
North'n.	1st Class. Coast of New England,	24	28	23	30	110
	2d Class. Posts on Northern chain of Lakes,	41	37	36	38	151
	3d Class. Posts north of lat. 39°, and remote from the ocean and inland seas,	45	48	37	34	166
Mid.	1st Class. Coast from Delaware Bay to Savannah,	37	36	27	24	126
	2d Class. South-western stations,	36	31	20	27	112
Sou.	1st Class. Posts on the lower Mississippi,	28	16	22	23	90
	2d Class. Posts in the Peninsula of East Florida,	38	23	30	26	119
	Total,	249	219	201	202	

It thus appears that these diseases, which are generally ascribed to sudden variations of temperature conjoined with excess of moisture, are less under the influence of atmospheric agency than is commonly supposed. It is evident, however, that these affections are, in some measure, controlled by the same laws which govern pulmonary diseases. Were cold, moisture, and sudden alternations of temperature, powerful exciting causes, the highest ratio should be given on the New England coast and the northern chain of lakes; on the contrary, it is found that, like pulmonic lesions, the disease is most rife in the dry and cold atmosphere of the interior, (the third class of the Northern division,) characterised by the extreme range of the thermometer and by seasons strongly contrasted. In the middle division, the first class, it is true, is higher than the second; but if the results of Fort Monroe, as in the calculations in regard to pulmonary diseases, are excluded, the annual average of the former is reduced to 93. In the northern division, the annual ratio of cases, per centum of the strength, is 15, whilst the mean of the middle and southern division is 11. Among 6257 cases registered, only one death is reported.

Were these affections much under the influence of meteorological causes, so far as regards variations of temperature, we should find, as in pulmonic lesions, a great contrast in the ratios of the seasons. Taking the totals of the four seasons, as shown in the table just given, the first and second quarters give the highest averages; but, contrary to the law which governs pulmonary diseases, the ratios of the third and the fourth are the same. Viewing the whole subject, however, it is found that a similarity obtains in the general laws which, on the one hand, govern rheumatic, and, on the other, pulmonary, but more especially catarrhal diseases.

These views are confirmed by the results given in the following abstract from the recent reports upon the medical statistics of the British troops:—

	Jamaica.	Nova Scotia and New Brunswick.	Bermudas.	Malta.	Ionian Islands.	Gibraltar.	Canada.	Mauritius.	Windward and Leeward Command, West Indies.	United Kingdom.	Cape of Good Hope.
Admissions from Rheumatic Affections annually per 1000 of mean strength,	29	30	33	34	34⅓	38	40	46	49	50	57

The reporter here directs attention to the fact that rheumatic diseases are more prevalent in the Mediterranean than in Canada and Nova Scotia, and that "though some of the provinces of the Cape of Good Hope have occasionally been without rain for several years, these diseases are more frequent in the dry climate of that command, than in the West Indies where the condition of the atmosphere is as remarkably the reverse; yet have extreme cold and atmospheric vicissitudes, coupled with excess of moisture, been assigned as satisfactory causes for their prevalence." Between the ratio of Canada and that of Nova Scotia and New Brunswick, the former being one third higher than the latter, the same law obtains as in the United States. Whilst in Canada the cold becomes so intense that the mercury congealed in the thermometer, serves no longer to indicate the extreme reduction of the temperature; in Nova Scotia, on the contrary, the mercury is seldom lower than 6° or 8° below zero in winter, or above 88° in summer—a modification arising from the insular character of the province, which is likewise so much intersected by lakes and bays, that nearly one third of its surface is under water. Notwithstanding the atmosphere is consequently exceedingly moist, and fogs are along the coast common throughout the year—a circumstance regarded as most favourable for the production of rheumatism—yet it is seen that the ratio is lower than in the dry and intensely cold climate of Canada. If the average of Nova Scotia were given distinct from that of New Brunswick, a more striking contrast, it is very probable, would be revealed. At all events, the opinion that rheumatic affections, like those of the lungs, obey, in some measure, the inflections of the isotheral and isocheimal curves, is warranted.

It will be observed that the annual ratio of rheumatic affections is two and three-fold greater among our troops than among the British, and that the same relation obtains in regard to pulmonary diseases. This may arise in some measure from the mode of reporting. In our service, all cases of disease, more especially of late years, are registered—those in hospital as well as those in quarters, whilst the British statistics, it would seem, contain only cases of admission into hospital. Much, however, is to be ascribed to the nature of the region we inhabit, which lies in the middle latitudes of the eastern side of a continent prolonged towards the poles. It is, therefore, emphatically an *excessive* climate, exhibiting the greatest range of temperature and the most marked distinction of seasons, whilst all the regions of the British commands are either mild insular climates or those in which a low temperature predominates.

Among the various systems of climate presented in the extensive region of the United States, that of the Peninsula of Florida is wholly peculiar. Possessing an insular temperature not less equable and salubrious in winter than that afforded by the south of Europe, it will be seen that invalids requiring a mild winter residence, have gone to foreign lands in search of what might have been found at home. Florida, therefore, merits the attention of physicians at the north; for here the pulmonary invalid may exchange for the inclement season of the north, or the deteriorated atmosphere of a room to which he may be confined, the mild and equable temperature, the soft and balmy breezes, of an ever-green land in which wild flowers never cease to unfold their petals.

From the earliest period, change of climate has been regarded as a remedial agent of great efficacy. This opinion is, indeed, confirmed by daily experience. Diseases that have long resisted medical treatment, are frequently suspended or entirely cured by a removal from a crowded city to an open country, or are found to yield, under the influence of such a change, to remedies that previously produced no impression.

Although the influence of different climates in the causation as well as the alleviation and cure of diseases, is a fact universally conceded; yet there is, perhaps, nothing in general science more unsatisfactory than the attempts hitherto made to explain the *modus operandi* of this power. This, however, will not be a matter of surprise, when it is recollected that the problem of physical climate remains, in a great measure, unsolved. How much more complicated then must the subject become, when involved with the elements of organic life, and all the complexity of their combinations resulting from health and disease.

Climate, indeed, modifies both the moral and physical nature of man. Each region of the globe presents peculiarities in regard to such organic modifications. The inhabitants of the same continent, as the German from the French, or the Esquimaux from the Southern Indian, may be readily distinguished. In casting one's eye over our National Legislature, the same diversity of physiognomy is apparent. The general countenance of each State's delegation is, indeed, a pretty sure criterion to judge of its comparative salubrity. We can at once distinguish the ruddy inhabitant of that mountain chain, where health and longevity walk hand in hand, where Jefferson and Madison inspired its cheerful and invigorating breezes, from the blanched resident of the sunny south—that fair and inviting land, whose fragrant zephyrs are laden with poison—the dews of whose summer evenings are replete with the seeds of mortality.

As erroneous impressions pervade the public mind in relation to the climate of East Florida as regards its comparative salubrity, it may not be inappropriate, before entering upon a special description, to give some general results based upon numerical calculations. These results, like those already given, are founded upon official papers on file in the War Department, the details of which constitute an official report on the vital statistics of the army, and the medical topography of the military stations.

According to the regimental returns, the ratio of mortality among the troops serving in Florida, from all causes—"ordinary, killed in action, died of wounds, and accidental"—during the years 1836, 1837, 1838, 1839, is 6.1 per cent. The annual average exhibits a progressive decrease, being in 1836, 11.4; in 1837, 6.9; in 1838, 4.7; and in 1839, 4.7 per cent. The ratio of mortality among these troops varies little from that of garrisons stationed in the south in time of peace—a fact established by the results of statistical investigations, and confirmed by the subjoined table, which exhibits, for the period of ten years, the average mortality of the army, computed by regiments:

Years.	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	Average.
Ratio of deaths per 1000 of mean strength annually.	36	32	29	68	30	57	49	48	53	42	44

The most conclusive evidence upon this point, is here afforded in the fact that although more than one-third of the actual strength of the army served in Florida in 1838, yet the mortality of the whole army for that year is only 4.2 per cent., a ratio lower than the mean of ten years. The ratio of mortality among the regular troops operating against the Seminoles, on an average of four years, is considerably lower than that of the 4th regiment of infantry for the period of the ten years embraced in the table just given. This regiment, which has borne the "tug of war" amid ungenial climes, presents the highest ratio, 7.6 per cent.; whilst the 5th infantry, which has had a kind of *home* station on the northern lakes, exhibits the lowest mortality, 1.3 per cent.

That the mortality among the invalids sent out of Florida will increase the ratio, may be supposed; but it is found, on investigation, that the result is not materially affected. Amongst the invalids that left Florida during the years 1836, 1837, and 1838, no more than 17 deaths can be traced. Including these fatal cases, the annual mortality in Florida from all causes, is increased from 6.1 to 6.3 per cent.

Prior to the pending hostilities, four permanent posts were maintained in East Florida, viz: Forts Marion, King, Brooke, and Key West. The annual mortality at the first three is 28 per 1000, and including Key West, it rises to 40. Although the climate of this region is treated of merely in reference to its fitness as a winter residence, yet it may not be amiss to give a general view of the relative mortality of the troops in the different sections of the United States, based on an average of 10 years.

Divisions.	Systems of Climate.	Aggregate mean strength.	Annual ratio of mortality per 1000 of strength	
			Adj. General's returns.	Medical returns.
North'n.	1st Class. Coast of New England, - - - - -	4279	20	15
	2d Class. Posts on Northern chain of Lakes, - -	6377	13	9
	3d Class. Posts north of lat. 39°, and remote from the ocean and inland seas, - - - - -	12790	14	8
	Average,	23446	15	9
Sou. Mid.	1st Class. Coast from Delaware Bay to Savannah, - -	6740	34	30
	2d Class. South-western stations, - - - - - -	11739	45	36
	1st Class. Posts on the lower Mississippi, - - -	3810	53	44
	2d Class. Posts in the Peninsula of Florida, - - -	4781	39	26
	Average,	27070	42	34
	Mean of the United States,	50516	30	22

It thus appears that in the northern division, the mortality, according to the Adjutant General's returns, is 1.5 per cent., and, according to the medical returns, 0.9 per cent.; and in the middle and southern divisions, according to the former, the mean is 4.2, and according to the latter, 3.4, per cent. In this calculation, the deaths from epidemic cholera have been excluded from both classes of returns; and from the medical reports, such deaths also as arose from homicide, suicide, asphyxia from cold, submersion, etc. The former exhibits the ratio of mortality from *all* causes, with the exception of Asiatic cholera, as reported in the post returns by the commanding officer; whilst the latter, as it shows the mortality arising from diseases chiefly, may be regarded as a pretty fair expression of climatic influence. In the middle and southern divisions, the ratio of mortality, according to the medical returns, is nearly four-fold greater than in the northern, and according to the post returns nearly three times higher. Our northern latitudes exhibit little variation in the annual mortality; but the southern, in consequence of more fatal epidemic visitations, show great extremes. It must be borne in mind that in the latter the troops consist mostly of northern constitutions impaired by intemperate habits. In the above abstract, the aggregate of deaths is 1104, more than one half of which may be traced to the effects of inebriation—a vice which, according to these statistics, may be indulged in our northern States as contrasted with the southern, with comparative impunity.

With the exception of the northern division, the mortality from disease is lower in east Florida than in any other class of posts. Forts Marion, King and Brooke, which have been kept up for many years, have always been esteemed healthy posts. Fevers of the intermittent and remittent type are the prevailing diseases. Excepting the southwestern region, the ratio of intermittents is higher in this class than in any other; but if the comparison is limited, for example, to Fort M'Henry, (Baltimore,) Fort Severn, (Annapolis,) and Fort Washington, opposite Mount Vernon, it is found favourable to the former, notwithstanding the garrisons of these northern posts generally formed summer-encampments. As regards remittents in east Florida, the annual ratio of cases, which is 102 per 1000 of the strength, is lower than the three preceding classes in the table, whose respective averages are 181, 180, and 196. In the first class of the middle as well as of the southern division, febrile action often assumes the high grade of intensity designated *yellow fever*. Whilst the causes of this fatal endemic seem to be annually present at Charleston and New Orleans, it has made its appearance but twice at St. Augustine within the period of 20 years.

Fevers of malarial origin are both more prevalent and fatal in that portion of Florida which borders on Georgia. Along the coast, and in many parts of the interior, salubrious positions are often found. At several posts along the eastern coast, a case of fever has sometimes not been reported in three or six months. Other localities, the stations being often selected less with reference to salubrity than military advantage, are not unfrequently very unhealthy.

In treating of the climate of Florida, the primary object held in view is, to direct attention to its fitness as a *winter* residence for northern invalids. In 1833, Professor Dunglison called the attention of the profession, on the strength of the meteorological registers kept by the medical staff of the army, to the suitableness of St. Augustine and Tampa Bay as a winter retreat. An examination of abstract No. 2, of Appendix, showing—1. The mean temperature of each month, each season, and the whole year; 2. The difference between the mean temperature of each month and season; and 3. The annual and monthly ranges of temperature—will, it is believed, not only furnish further confirmation of the doctrines already conclusively established, but lead to results of great value to the practical physician.

The results of the four posts in abstract No. 2 of Appendix, illustrate the modifying agency of large bodies of water. Fort King, situated in the interior, has a warmer summer and a colder winter than the remaining stations, all of which are on the coast. Although Key West is 4°39′ south of Fort King, and has a mean annual temperature 3°.43 higher, yet the mean summer temperature is 2°.81 lower. The equalizing influence of the ocean is still further shown by the annual range of the thermometer, the mean of the monthly ranges, and the mean difference of successive seasons. During the summer months, the morning and evening observations are nearly the same at both points, the disparity being caused by the exalted temperature of Fort King at mid-day. In each year, July was the hottest month at Key West, and the month of June at Fort King. As is usual in southern latitudes, there is little variation presented at Key West in the mean temperature of the same month in different years.

There is little difference between the thermometrical phenomena presented at Key West and the Havanna. Within the period of six years, (from 1830 to 1835 inclusive,) the mercury at Key West was never known to rise higher than 90°, nor sink lower than 44°.

The peculiar character of the climate of Florida, as distinguished from that of more northern latitudes, consists less in the mean annual temperature than in the manner of its distribution throughout the year. At Fort Snelling; Iowa, the mean temperature of winter is 17°.29, and of summer, 72°.80, whilst at Fort Brooke, Tampa Bay, the former is 65°.02, and the latter 81°.04 and at Key West, 70°.05 and 81°.39. Notwithstanding the winter at Fort Snelling is 52°.76 colder than at Key West, the summer, at the latter is only 8°.59 warmer. In like manner, although the mean annual temperature of Petite Coquille, La., is nearly 2° lower—that of Augusta Arsenal, Ga., nearly 8°—and that of Fort Gibson, Arkansas, upwards of 10° lower, than that of Fort Brooke; yet at all, the mean summer temperature is higher. Between Fort Snelling on the one hand, and Fort Brooke and Key West on the other, the relative distribution of temperature stands thus:—Difference of the mean temperature of summer and winter at the former 55°.51, and at the two latter 16°.02 and 11°.34; difference of the mean temperature of the warmest and coldest month, 61°.18 compared with 17°.68 and 14°.66; and the mean difference of successive months stands as 10°.20 to 2°.97 and 2°.44. At Fort Snelling, the annual range of the thermometer is 116°, and at Fort Brooke and Key West it is 56° and 37°; and the mean of the monthly ranges bears the relation of 50° to 29° and 16°. The attention is thus directed merely to a few prominent points, as a reference to the tabular abstract will enable any one to trace much farther this remarkable equality in the distribution of temperature among the seasons in Florida. A comparison with the most favoured situations on the continent of Europe, and the islands held in highest estimation for mildness and equability of climate, affords results no way disparaging. A comparison of the mean temperature of winter and summer, that of the warmest and coldest months, and that of successive months and seasons, furnishes results generally in favour of the peninsula of Florida. The mean difference of successive months stands thus:—Pisa 5°.75, Naples 5°.08, Nice 4°.74, Rome 4°.39, Fort King 4°.28, Fort Marion, at St. Augustine, 3°.55, Penzance, England, 3°.05, Fort Brooke 2°.97, Key West 2°.44, Madeira 2°. 41. The mean annual range thus;—Fort King 78°, Naples 64°, Rome 62°, Nice 60°, Montpellier 59°, St. Augustine 59°, Fort Brooke 56°, Penzance 49°, Key West 37°, and Maderia 23°.* The island of Madeira is esteemed by Dr. Clark as best adapted to consumptive patients.

In the West India islands, the mean annual temperature near the sea is only about 80°. At Barbadoes, the mean temperature of the season is—winter 76°, spring 79°, summer 81°, and autumn 80°. The temperature is remarkably uniform; for the mean annual range of the thermometer, even in the most variable of the islands, is only 13°, and in some it is not more than 4°.† Contrast this with Fort Snelling, Iowa, which gives a range of 116°!

It has been seen that the meteorological agents which determine the ratio of pulmonic lesions, causing the first and fourth quarters to present the highest averages, and the third the lowest, is the marked distinction of season characterized by extremes of temperature. Hence the apparent exception to this rule in the system of climate pertaining to East Florida, where the third quarter has a higher ratio than the second or fourth, (see Table p. 21,) instead of contradicting a general law, corroborates it. As Florida is an ever-green land, the influence of the seasons does not impress the pulmonary organs sufficiently to derange their functions by their transition. Hence the ratio of pulmonic lesions is low; and as the causes which are secondary in excessive climates, grow here into primary ones, these diseases may be as rife in the summer as in the spring or autumn.

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* Contrary to the numerical ratios furnished in his tables, Dr. Clark says that "the mean annual range of temperature is only 14°"—an error which has crept into the writings of Dr. Dunglison.

† According to the British army statistics.

The state of the weather as indicated by the course of the winds and the proportion of fair and cloudy days, calculated for the same years as abstract No. 2 of Appendix, is shown in the following table:—

Places of Observation.	Course of Winds.								Prevailing.	Weather.			Prevailing.
	N.	N W.	N. E.	E.	S. E.	S.	S. W	W.		Fair.	Cloudy.	Rain.	
	Days.	Days.	Days.	Days.	Days.	Days.	Days.	Days.		Days.	Days.	Days.	
St. Augustine,	1.55	2.86	9.08	1.03	10.83	1.11	2 64	1.33	S. E.	19.02	5.19	6.22	Fair.
Fort King,	1.62	2.79	3.46	3.54	4.37	5.63	5.96	3.08	S.W.	25.75	2.88	1.89	Fair.
Fort Brooke,	1.53	3.72	5.58	2.89	4.44	2.75	6.42	3.17	S.W.	20.33	4.47	5.64	Fair.
Key West,	3.20	3.13	10.50	5.37	5 37	0.54	1.67	0.38	N.E.	21.54	3.08	5.92	Fair.

The want of hygrometrical observations to indicate the actual or comparative humidity of the atmosphere is to be regretted. That the air is much more humid than in our more northern regions is sufficiently cognizable to the senses. The dews, even in the winter, are generally very heavy. To guard against the oxidation of metals, as for example surgical instruments, is a matter of extreme difficulty. During the summer, books become covered with mould, and keys rust in one's pocket. *Fungi* flourish luxuriantly. The writer has known a substance of this kind spring up in one night, and so incorporate itself with the tissue of a woollen garment as to render separation impracticable. As general relaxation and lassitude are consequent on this prevailing humidity, it may exercise some agency in the production of the comparatively high ratio of pulmonic and rheumatic affections in the summer season. One of the best safeguards against its effects is, to wear flannel next the skin—a custom generally adopted in the army. It is, indeed, a hygienic measure no less valuable in warm than in cold climates, affording comparative immunity against thermometrical and hygrometrical vicissitudes.

As the rains, however, generally fall at a particular season, so the atmosphere in winter is comparatively dry and serene. The following abstract of the monthly fall of rain at Key West, is the mean result of five years' observation:—

Jan.	*Feb.*	*March*	*April*	*May*	*June*	*July*	*Aug.*	*Sep.*	*Oct.*	*Nov.*	*Dec.*	*Annual average.*
1.82	1.34	1.98	1.09	6.34	2.39	2.84	3.30	4.35	3.33	1.49	1.13	31.40

It will be observed that during six months, from November to May, which is the longest period that a northern invalid should remain in this climate, the proportion of rain is but 8.84 inches. It has been already remarked that in tropical climates a portion of the year is known as the rainy season, and that the same quantity descends in a much shorter space of time than in the temperate zone; and that consequently the proportion of fair days and clear skies is infinitely in favour of the former. In the table of the weather just given, in which the ratios are monthly averages, this result is strikingly manifested. At Fort King, the annual number of fair days is 309, whilst on the northern lakes, it is only 119. On the coast of Florida, however, the average is not more than 250 days.

The influence of temperature on the living body is often indicated more accurately by our sensations than the thermometer. The advantages of climate as regards its fitness for the pulmonic, not unfrequently depend on the mere circumstance of exposure to, or shelter from cold winds. The frequency and severity of the winds at St. Augustine constitute a considerable drawback on the benefits of the climate. The chilly northeast blast, surcharged with fogs and saline vapours, sweeping around every angle of its ancient and dilapidated walls, often forbids the valetudinarian venturing from his domicil. To obviate these disadvantages, a large house was erected at Picolata on the St. John's; but during the pending Indian disturbances, it has been converted into a barrack and an hospital.

To persons labouring under an irritable state of the bronchial membrane, high winds are particularly injurious. If the consumptive invalid have much sensibility to harsh and keen winds, and if the immediate vicinity of the sea be known to disagree, Fort King ought to be recommended before St. Augustine or even Fort Brooke; but as sea-air is known to be generally adapted to a relaxed habit and a languid and oppressed circulation, a favourable position on the coast should, in such cases, be selected as a winter residence.

The natural advantages of position, without reference to extrinsic circumstances are now under discussion. St. Augustine is on the eastern coast; Fort Brooke is at the head of Tampa Bay,* about 30 miles from the Gulf of Mexico; Fort King is intermediate to these two points; and Key West belongs to the Archipelago south of Cape Sable. The pending hostilities with the Aborigines, and the difficulty of obtaining accommodations indispensable to the comfort of the invalid, render a winter retreat almost impracticable any where but at St. Augustine or Key West. The oldest town in the United States, and built mostly of a concrete shelly stone in the Spanish style, St. Augustine presents an antiquated appearance, enlivened by beautiful orange-groves bending at due season beneath their golden fruit.† The old Spanish fort and the *tout ensemble* of the city, give it more the resemblance of a place of defence than of elegance; but it is these circumstances which associate it with history, and render it peculiarly interesting to the American traveller. Moreover, the inhabitants extend kindness and hospitality towards strangers. Key West, about 60 miles southwest of Cape Sable, is two miles wide and ten long, and is remarkable as being the most southern settlement of the United States. Possessing a good harbour, it has been from time to time the station of our West India squadron. It contains about 1400 souls, and is a place of some commerce chiefly in the way of wrecked goods.

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* The old Spanish appellation was Espiritu Santo, or bay of the Holy Ghost, the name Tampa being then restricted to an arm.

† In 1835, nearly all the orange trees in Florida were destroyed by frost—an occurrence previously unknown in the memory of the oldest inhabitant.

In contemplating the scenery of East Florida in the month of January, one is apt to forget that it is a winter landscape. Fort Brooke on Tampa Bay is a truly delightful spot, in which tropical fruits flourish luxuriantly. The lime, the orange, and the fig find there a genial soil, whilst the moss-covered* live-oak and the Pride of China, add beauty and variety to the scene. Vegetation is continuous through every season, culinary vegetables growing in January; and the temperature of the waters in rivers and bays will admit of bathing in every month of winter. To the northern man, all nature seems changed. Even the birds of the air—the pelican and flamingo—indicate to him a climate entirely new. Having accompanied a boat expedition, the object of which was to explore the sources of the St. Johns, the writer found, in the month of January, the high cane-grass which covers its banks intertwined with every variety of morning-glory, (*convolvulus.*) The thermometer at mid-day, in the shade, stood at 84° Fahr, and in the sun, rose to 100°; and at night we pitched no tents, but lay beneath the canopy of heaven with a screen perhaps over the face as a protection against the heavy dews. Notwithstanding the day attains such a high temperature, the mercury just before day-light often sinks to 45°, causing a very uncomfortable sensation of cold.

But there are other localities which combine advantages equally important to the pulmonary invalid. On the eastern coast of Florida, at New Smyrna for example, the warmth and softness of the air wafted from the isles of the West Indies across the gulf-stream, in the winter months, are truly grateful to the senses lulling them into repose. Even the virtuoso would not be without materials for contemplation; for here may be seen the ruins of Dr. Turnbull's colony of Greeks, Italians, and Minorcans—his unfinished castle, whose dilapidated and mouldering walls are covered with ivy, amid the luxuriance of the palm,† orange, mangrove, and magnolia. Cape Sable and the coast extending northward towards Key Biscayno, as well as the adjacent islands, would also afford an excellent winter retreat. Adapted to the cultivation of tropicoid fruits, and abounding in game, fish, and turtle, this region, from the prevalence of the sea-breeze or trade-winds, presents a climate delightful even in the summer season. Key Biscayno, which is situated on the southeastern coast of Florida, affords an excellent harbour of safety and protection from the storms which frequently rage along the coast. This island is thus described by a medical officer of the army, when stationed there six months:—

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* This parasite, (*Tilandsia usneoides,*) known by the vulgar name of Spanish moss, casts a sombre aspect over the scenery of Florida. Resembling the weeping willow clothed in the garniture of hoary age, it has been styled, not inappropriately, the shades of death.

† The cabbage-palm, (*chamærops palmetto,*) is a beautiful tree, presenting sometimes a straight column of 80 feet without a limb. The trunk is generally enclosed by the foot-stalks of the old branches, resembling a coarse net-work. The embryo head is esculent bearing the taste of unripe chesnuts. The leaf is used in the manufacture of hats, mats and baskets, as well as in the construction of the Indian's wigwam.

"In the midst of summer, the constant prevalence of the sea-breezes renders it at all times of the day delightful in the shade. During the winter, frost is never known; nor is it ever so cold as to require the use of fire. The eastern beach commands a beautiful view of the open sea, and offers, especially during low tide, an admirable place for exercise on horseback for the distance of four or five miles, and for morning and evening walks. The waters around abound in green turtle, and a variety of excellent fish, forming a wholesome and nutritious diet, particularly well suited to cases of pulmonary disease. There is also an abundance of crawfish and crabs. The mainland is only a short distance off, abounding with deer and a variety of other kinds of game, affording a fine field for the sport and exercise of hunting; and the vicinity of the West India islands will, at all times, present the opportunity of procuring the best of the tropical fruits.

"The proprietor of the island will, in a short time, erect buildings, and will establish every means in his power for the convenience and comfort of those who may be disposed to visit the place for the recovery of their health. There has been not a single case of fever among the troops since I have been stationed here, and I have no hesitation in stating my opinion that it will be perfectly healthy at all seasons of the year."

When not exposed to the influence of malaria, the climate of Florida, as along the eastern coast, is, even in the season of summer, quite salubrious. The sea-breezes, aided by the deposition of moisture from the atmosphere, generally render the nights pleasant, even in the hottest months and in the centre of the Peninsula. The writer can state from personal knowledge that after the middle of August the nights become so cool that a blanket is desirable. The climate of the tropics is characterized, as Humboldt justly remarks, much more by the duration of heat than its intensity; and it is to the action of this unceasing high temperature that much of the injurious influence of tropical climes on northern constitutions, is to be ascribed.

But woe to the invalid that braves the torments of a summer residence under the disadvantages of a camp life! Insects are the pest of a tropical clime. As to fleas, flies, and ticks, the interior of Florida may well rival Egypt in the days of Pharaoh. The chigoes insinuate themselves beneath the skin, where they soon establish populous colonies. Flies seem, indeed, to form a component part of your food, your drink, and the atmosphere you inhale. Lizards, snakes, and scorpions, get into your bed, whilst the industrious ant and weevil not only eat your rations, but devour your books—the food of the mind. All nature seems alive; and every hour you observe some uncouth living thing, whose family name has scarce been registered by the entomologist. In addition to these annoyances, you will have a nightly serenade performed by wolves and alligators—a woful concert of whining yells and dismal bellowings, constituting the realization of a *howling* wilderness.

Since a more rational view of the nature and causes of pulmonary diseases has prevailed, the beneficial effects of change of climate in certain forms have been fully established. Formerly, when consumptive patients were indiscriminately condemned to undergo expatriation, the unfortunate invalid often sank before he reached his destination, or he was doomed soon to add another name to the long and melancholy list of his countrymen, who seem to have sought a foreign land, far from friends and home, only to find a premature grave. When it is considered, however, that all remedial agents have proved so inefficacious in phthisis pulmonalis as to place it emphatically among the *opprobria medicorum*, it is no ways surprising that its victims should seek beneath the influence of a more genial clime, the relief, however uncertain, denied them in their own.

The south-western coast of a country is generally mild and humid, and consequently soothing but rather relaxing. In diseases accompanied with an inflammatory condition of the general system, or dependent on an excited state of particular organs, this variety of climate has been found more especially beneficial. Decided advantage may reasonably be anticipated in chronic inflammatory affections of the trachea and bronchia, attended with a dry cough and little expectoration; but when such cases occur in individuals of a languid and relaxed state of constitution, accompanied by copious expectoration from the mucous surfaces, the disease is much more likely to be aggravated than relieved. These remarks, which are made by Clark "on Climate," are equally applicable to all other diseases attended with great relaxation of the general system. It is, therefore, manifest that, in recommending a change of residence to invalids, attention to these distinctions, both in regard to varieties of climate and peculiarities of disease, is absolutely necessary.

The climate of Florida has been found beneficial in incipient cases of pulmonary consumption, and those threatened with the disease from hereditary or acquired predisposition. It is in chronic bronchial affections more particularly that it speedily manifests its salutary tendency. To distinguish the *bronchial* from the *tubercular* form of the disease, often demands considerable powers of discrimination; and upon this distinction frequently hangs the propriety of a removal to a southern clime. The application of the physical means of exploration, now so ardently cultivated, has fortunately given a greater degree of certainty to our diagnosis.

But there are other forms of disease in which such a climate as that of East Florida is not unfrequently of decided advantage. To this class belongs *asthma.* As this term is too commonly applied to every disease in which difficulty of respiration is a prominent symptom, let us not prescribe for a mere name; but when consulted on the propriety of a change of climate, let the pathological condition of the patient be duly estimated. In simple spasmodic asthma, unconnected with organic disease, or in that form which is complicated with chronic bronchitis, or is symptomatic of primary irritation in other viscera, such as the stomach, intestines or uterus, the patient is generally much benefited. In asthma connected with affections of the heart, a mild climate often affords temporary relief. In this variety of complication, a sea-voyage is frequently of striking service.

In chronic disorders of the *digestive* organs, when no inflammation exists or structural changes have supervened in viscera important to life, but the indication is merely to remove disease of a functional character, a winter residence promises great benefit; but exercise in the open air, aided by a proper regimen, are indispensable adjuvants.

In many of those obscure affections, called *nervous*, unconnected with inflammation, exercise and travelling, in this climate, are frequently powerful and efficient remedies.

Chronic rheumatism, though apparently much less under the influence of meteorological causes than pulmonic affections, will often be benefitted by a winter residence in Florida. As these cases often resist the best directed efforts of medicine, it is the only remedy which the northern physician can recommend with a reasonable prospect of success. When the disease is complicated with much derangement of the digestive organs, it is customary in Europe to visit such places as combine the additional advantage of a course of bathing, as the mineral waters of the Pyrenees, those of Aix in Savoy, and the various baths of Italy.

When there exists a general delicacy of the constitution in childhood, often the sequel of rubeola or scarlatina, manifesting itself by symptoms indicative of a scrofulous disposition, a winter residence in a warm climate frequently produces the most salutary effects. At the period of puberty in females, a similar condition of the system often arises, preventing the development of those new functions peculiar to this stage of life. This general derangement, if not soon corrected, often results in a constitutional disorder beyond the resources of our art, denominated by Clark "*Tubercular Cachexy,*" the precursor of pulmonary consumption. If the winter can be passed in a warm climate, and the patient have the advantage of exercise on horseback, warm sea-bathing, and a well regulated diet, the youthful invalid may often be rescued from an untimely grave.

Another form of disease remains to be alluded to, in which change of climate promises its healing powers, *viz.*, premature decay of the constitution, characterized by general evidence of deteriorated health, whilst some tissue or organ important to life commonly manifests symptoms of abnormal action. This remarkable change often occurs without any obvious cause, and is not inappropriately termed in common parlance, "a breaking up of the constitution."

Let not the invalid, however, trust too much to a change of climate. Unfortunately for the character of the remedy, it has been recommended indiscriminately and without proper consideration. It has been too often resorted to as a last resource or forlorn hope; or in cases susceptible of alleviation or permanent cure, it has been wholly misapplied. One person is hurried from his native land with the certainty of having his sufferings increased and his life shortened, instead of being allowed to die in peace in his own family; whilst another, who might derive much advantage from the change, is sent abroad wholly uninstructed in regard to the selection of a proper residence, or ignorant of the various circumstances by which alone the most suitable climate can be rendered beneficial. It is one of our most powerful remedial agents, and one too which, in many cases, will admit no substitute. But much permanent advantage will result neither from travelling nor change of climate, nor their combined influence, unless the invalid adheres strictly to such regimen as his case may require. This remedy must be considered in the light of all other therapeutic means, and to ensure its proper action, it is necessary that the requisite conditions be observed.

At the present time, St. Augustine and Key West are the only places, which afford the conveniences required by the wants of an invalid; but assuming that proper accommodations can be equally obtained at all points, Key Biscayne on the southeastern coast, or Tampa Bay on the Gulf of Mexico, claims a decided preference, especially over St. Augustine. As a general rule, it would be judicious for the northern physician to direct his pulmonary patient to embark about the middle of October for Tampa Bay. Braving the perils of the wide ocean, he will realize the healthful excitement incident to the fears and hopes of a sea-voyage. Having spent the winter months at Tampa, let him proceed early in March to St. Augustine, by way of Dade's battle-ground and the old Seminole agency. In addition to the corporal exercise, he will find food for mental digestion at every step of his journey. Having thus reaped the benefit of a sea-voyage and all the advantages to be derived from a change of climate, the valetudinarian may return to his anxious friends so much renovated in health and spirits as to be capable of enjoying again the blessings of social life.

As long, however, as predatory Seminole bands retain possession of this peninsula, few itinerant invalids will imitate the example of the celebrated Spanish adventurer, Ponce de Leon, who, in the wild spirit of the 16th century, braved the perils of unknown seas and the dangers of Florida's wilds, in search of the far-famed fountain of rejuvenescence. When the period, however, of the red man's departure shall have passed, the climate of this "land of flowers" will, it may be safely predicted, acquire a celebrity as a winter residence not inferior to that of Italy, Madeira, or Southern France.

Fort Wood, *Harbour of New York, September*, 1840.

strength of [illegible]—the strength being computed from the Monthly Returns in the Adjutant General's Office.

MILITARY STATIONS.	First Quarter.							Second Quarter.							Third Quarter.							Fourth Quarter.							Annual Results.						Deaths.					
	No. of Years of observation.	Aggregate mean strength.	Catarrh and Influenza.	Pneumonia.	Pleuritis.	Phthisis Pulmonalis.	Rheumatic affections.	No. of Years of observation.	Aggregate mean strength.	Catarrh and Influenza.	Pneumonia.	Pleuritis.	Phthisis Pulmonalis.	Rheumatic affections.	No. of Years of observation.	Aggregate mean strength.	Catarrh and Influenza.	Pneumonia.	Pleuritis.	Phthisis Pulmonalis.	Rheumatic affections.	No. of Years of observation.	Aggregate mean strength.	Catarrh and Influenza.	Pneumonia.	Pleuritis.	Phthisis Pulmonalis.	Rheumatic affections.	Aggregate mean strength.	Catarrh and Influenza.	Pneumonia.	Pleuritis.	Phthisis Pulmonalis.	Rheumatic affections.	Catarrh and Influenza.	Pneumonia.	Pleuritis.	Phthisis Pulmonalis.	Hæmoptysis.	Rheumatic
1st Class—Northern Division.																																								
Fort Sullivan,	8	484	30	7	6	2	12	8	455	23	1	7		18	7	389	11	2	5		14	7	399	38	14	9	1	20	432	102	24	27	3	64				2		
" Preble,	7	382	17	3	8		11	6	836	6	3	5	2	8	7	392	5	2	1	2	12	7	394	21	4	4	3	12	376	49	12	18	7	43				2		
" Constitution,	8	443	3	3		1	4	7	371	1		4		6	7	365		3			5	7	382	26	1		1	3	390	30	7	4	2	18		1		1		
" Independence,	5	564	14	85	10	1	25	5	574	5	22	19	3	27	5	570	8	31	7	3	36	4	426	6	84	3	1	25	533	33	222	39	8	113		1		2		
" Wolcott,	8	499	40	4			9	7	349	11	1	5		7	7	362	4	2		1	6	7	382	38	10			7	380	93	17	5	1	29				2		
" Trumbull,	8	635	36	2	6	1	15	7	516	15	1	3	2	11	7	677	21	2	3	3	9	7	588	23	1	4	2	11	604	95	6	16	8	46				4		
" Columbus,	8	1081	92	2		2	20	7	998	93		4	5	24	8	907	69		4		23	9	806	104		4	2	23	948	358	2	12	9	90				4		
Total, *excluding Ft. Independence,*		4018	218	21	20	6	96		3599	149	6	28	9	101		3662	110	11	13	6	105		3377	260	30	21	9	101	3663	727	68	82	30	403		1		15		
Ratio per 1000,			63	6	6	2	24			49	2	9	3	28			36	3	4	2	29			85	10	7	3	30		233	22	26	9	110						
2d Class.																																								
Fort Brady,	10	1011	74	3	1	3	23	10	947	56	4	4	1	31	9	885	46	16			20	10	1004	72	10	2	3	17	962	248	33	7	7	91				1		
" Mackinac,	9	948	66	1	5	1	47	8	838	47	2	12		60	8	800	50	5	10		34	8	872	40	3	12	2	41	865	203	11	39	3	182						
" Gratiot,	9	882	119	4	9		51	9	699	79	12	10	2	22	7	688	24		6	1	25	9	857	124	5	7	1	35	782	346	21	32	4	133				1		
" Howard,	10	1764	129	1	11	10	89	10	1708	70	2	16	6	61	9	1596	94		25	10	59	10	1594	91	3	8	2	65	1647	384	6	60	28	274	1	1		1		
" Dearborn,	7	668	30	1	6	1	20	6	542	8	1	5		8	6	579	6		4		17	6	561	18	1	5	1	11	588	62	3	20	2	56				1		
" Niagara,	7	677	55	10	5	2	15	6	561	54	5	3	3	14	5	498	30	1			23	6	544	64	3	4	1	20	570	203	19	12	6	72		1		5		
Madison Barracks,	4	420	102	4	6		19	4	378	38	6	3		14	4	672	32	5			26	4	773	183	3	2		48	561	355	18	11		107		2				
Total,		6370	575	24	43	17	264		5667	352	32	53	12	210		5648	282	27	45	11	204		6205	592	28	40	10	237	5975	1801	111	181	50	915	1	4		9		
Ratio per 1000,			90	4	7	3	41			62	6	9	2	37			50	5	8	2	36			96	5	7	2	38		301	19	30	8	151						
3d Class.																																								
Hancock Barracks.	10	1671	168	19	27	3	47	10	1560	83	6	35	1	86	10	1630	62	11	9		56	10	1672	124	5	[illegible]	5	59	1633	437	41	85	9	948		1		4	1	
West Point,	10	3631	783	15	20	6	177	10	3543	559	4	3		187	10	3898	555	20		1	198	10	3865	1176	37	11		196	3734	3073	76	34	7	688				4		
Fort Snelling,	10	1547	210	3	16	4	108	10	1515	314	2	6		127	10	1424	182	3	13		73	10	1499	214	1	17		84	1496	920	9	52	4	392				1		
" Winnebago,	10	1535	102	5	6	1	33	10	1505	74	4	10	2	35	10	1527	80	1	2	6	15	10	1571	132	1	5	1	96	1534	446	11	29	10	109			1	3		
" Crawford,	9	1660	288	6	19	3	42	10	1749	255	6	9	2	62	10	1885	146	2	17	5	58	10	1878	359	14	30	3	47	1793	1046	28	75	13	209				6		
" Armstrong,	8	666	96	3	6		33	7	534	46	3	7	1	33	6	555	19		3	1	24	7	608	48	3	7	1	23	591	209	9	23	3	113						
" Leavenworth,	10	2127	537	15	23	11	134	8	1492	92	13	14	4	76	9	1546	33	7	4		37	9	2126	180	2	10	4	88	1823	842	37	57	19	335		2		4		
Total,		12837	2244	66	117	28	574		11898	1423	38	90	10	606		12465	1077	44	48	13	461		13819	2233	63	[illegible]	14	453	12604	[illegible]977	211	355	65	2094		3	1	22	1	
Ratio per 1000,			175	5	9	2	45			120	3	8	1	48			86	4	4	1	37			169	5	7	1	34		552	17	28	5	166						

1st Class—Middle Division.																																						
Fort Delaware,	4	399	27	1	4	2	7	4	372	11		1	4	6	3	302	1				9	3	329	16	1	1	5	3	350	55	2	6	11	25		1		2
" McHenry,	8	652	79	10	12		13	7	598	45	1	4		15	7	567	7		2	1	14	7	569	80		12	2	10	596	211	11	30	3	52				1
" Severn,	6	300	39	6	7	3	15	7	409	17	2	1	3	13	7	412	6	4	5	2	11	6	357	40	6	4		10	385	102	18	17	8	49				2
" Washington,	5	290	43	3	3	1	5	6	340	28	1	4	1	7	6	318	3		2		1	7	397	42	3	7	2	5	336	116	7	16	4	18				4
" Monroe,	9	2625	591	132	81	8	133	9	2784	407	53	31	6	134	9	3196	299	10	20	3	99	7	1998	677	54	35	4	73	2651	1974	249	167	21	439	4	8		17
Bellona Arsenal,	5	264	14	4	2		12	5	265	2	1			6	5	259	1				1	4	208	29	1				249	46	6	2		19				
Fort Moultrie,	7	756	98	6	7	4	28	7	718	33	6	11	4	21	7	611	47	10	1	1	26	6	574	55	8	1	1	8	665	233	30	20	10	83				7
" Johnston,	7	395	42	1	1	1	4	7	389	5		1	3	13	6	326	5			1	6	5	289	15				2	350	67	1	2	5	25				1
Oglethorpe Barracks,	6	393	25	2	4	2	12	6	308	11	1	3	1	10	4	220		1			2	4	150	4	1	2		4	268	38	5	9	3	28			1	2
Total,		6134	958	165	121	21	229		6183	559	65	56	22	225		6211	369	25	30	8	169		4871	958	74	62	14	115	5850	2842	329	269	65	738	4	9	1	36
Ratio per 1000,			156	27	20	3	37			90	11	9	4	36			60	4	5	1	27			197	15	13	3	24		486	56	46	11	126				
Ratio, *excluding Ft. Monroe,*			102	9	11	4	27			45	4	8	5	27			23	5	3	2	23			97	7	9	3	15		275	25	32	13	93		1	1	19
2d Class.																																						
Jefferson Barracks,	7	2942	296	41	86	7	62	8	2907	116	8	33	10	61	9	3824	117	12	38	20	25	8	3098	384	25	54	12	81	3193	913	86	211	49	229		8	1	18
Fort Gibson,	10	3978	506	182	102	12	139	10	3824	251	33	39	7	96	10	4047	73	16	19	16	78	10	4407	276	28	38	7	85	4064	1106	259	198	42	398		12	1	26
Forts Smith and Coffee,	5	253	29		2	1	14	4	207	2	2	1		7	5	270	25	2			6	4	205	13	2	1		7	234	70	6	4		34		2		
Fort Towson,	8	1157	40	22	7	3	45	8	1437	30	7	12	6	44	8	1415	38	1	7	2	29	8	1388	42	17	10	2	47	1349	150	47	36	13	165		1		5
" Jesup,	10	2281	426	15	28	5	122	10	2299	250	7	45	6	126	10	2291	139	4	20	6	93	10	2330	179	6	50	2	86	2300	994	32	143	19	427		8		12
Total,		10611	1297	260	225	28	382		10674	649	57	130	29	334		11847	392	35	84	44	2 1		11428	894	78	153	23	306	11140	3233	430	592	123	1253		31	2	61
Ratio per 1000,			122	25	21	3	36			61	5	12	3	31			33	3	7	4	20			78	7	13	2	27		290	39	52	11	112				
1st Class—Southern Division.																																						
Augusta Arsenal,	8	609	61	7	1	2	20	7	493	10	7	1	2	13	7	488	8	4			15	7	359	7	3			12	487	86	22	2	4	60				4
Fort Mitchell,	6	799	64	2	19	1	27	8	725	14	1			12	8	581				1	9	6	516	12	2	1	1	12	655	90	5	20	3	60				3
Baton Rouge,	7	1119	77	17	8	2	28	7	1123	41	2	4	5	7	7	943	36		11	2	22	7	1027	66	5	10	2	24	1053	220	24	33	11	81		1	1	1
New Orleans,	4	283	49		2			5	395	22	3	1	1	1	3	223	5		6	1	2	5	346	38		2		5	312	114	3	11	2	8				1
Fort Pike,	8	464	30	3	8	3	15	7	395	6	3	4	2	7	6	323	6				11	6	323	17	5	1	2	1	376	59	11	13	7	34				1
" Wood,	7	380	68	2	2		10	7	328	26		3		11	7	307	22	1	1	1	4	7	320	40				10	334	156	3	6	1	35			1	
" Jackson,	4	218	6	2	4	2	10	2	132	2	1	3		6	2	109					4	4	196	6	2	4		8	164	14	5	11	2	28		1		
Total,		3872	355	33	44	10	110		3591	121	17	16	10	57		2974	77	5	18	5	67		3087	186	17	18	5	72	3381	739	73	96	30	306		2	2	10
Ratio per 1000,			92	9	11	3	28			34	5	4	3	16			26	2	6	2	22			60	5	6	2	23		218	22	28	9	90				
2d Class.																																						
Fort Marion,	6	305	31	8	3	2	12	6	321	23	3	2	4	12	7	379	17	1	3	3	20	4	206	15	2			5	303	86	14	8	9	49				
" King,	4	345	15	3	1	1	9	4	413	20	4	1		10	3	445	3	1	1	1	7	4	427	9		1	2	9	408	47	8	4	4	35				1
" Brooke,	5	746	56	1	13		17	4	453	25	1	3		14	4	578	42	2	10		5	4	608	30	5	2	1	12	596	153	9	28	1	48				
Key West,	5	271	13	1	2	1	21	4	231	5	2	2		12	3	166	11		6	1	21	3	164	12		1	1	22	208	41	3	11	3	76				2
Aggregate of 31 Posts,	1	3467	114	13	33	7	137	1	3280	41	9	15	7	60	1	2606	94	7	3	4	74	1	3016	82	5	11	5	69	3092	331	34	62	23	340			1	6
Total,		5134	229	26	52	11	196		4698	114	19	23	11	108		4174	167	11	23	9	127		4421	148	12	15	9	117	4607	658	68	113	40	548			1	9

Places of Observation.	Years of Observation.	Mean Annual Temp.	Mean Temp. of the Seasons.				Mean Temperature of Each Month.											
			Winter.	Spring.	Summer	Autumn.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Lat. 29° 50′, Long. 81° 27′. St. Augustine, - -	1825–8–30	72.24	62.83	70.55	82.05	73.56	62.15	64.97	66.53	68.68	76.44	81.12	82.36	82.68	79.56	73.61	67.47	61.38
Lat. 29° 12, Long. 82° 12′. Fort King, - - -	1833–4	72.66	61.78	72.56	84.20	72.08	60.81	65.28	65.56	73.31	78.81	84.94	84.03	83.63	81.52	72.81	61.98	59.25
Lat. 27° 57′, Long. 82° 35′. Fort Brooke, Tampa Bay,	1825–8–30	73.19	65.02	71.71	81.04	74.59	63.75	66.56	66.48	71.27	77.39	80.90	81.43	80.79	79.01	75.04	69.71	64.76
Lat. 24° 33′, Long. 81° 52′. Key West, - - -	1831–2	76.09	70.05	76.04	81.39	76.96	67.93	72.15	73.71	75.69	79.22	80.51	82.59	81.06	80.89	76.76	73.23	70.08

II. *The Difference between the Mean Temperature of each Month and Season.*

Places of Observation.	Mean Annual Temp.	Difference of Mean Temp. of Summer and Winter.	Difference of Mean Temp. of Warmest and Coldest Month.	Mean Difference of Successive Mo's.	Difference of the Successive Seasons.				Difference of the Successive Months.											
					Of Winter and Spring.	Of Spring and Summer.	Of Summer and Autumn.	Of Autumn and Winter.	Of Jan. and Feb.	Of Feb. and Mar.	Of Mar. and April	Of April and May.	Of May and June.	Of June and July.	Of July and Aug.	Of Aug. and Sept.	Of Sept. and Oct.	Of Oct. and Nov.	Of Nov. and Dec.	Of Dec. and Jan.
St. Augustine, - -	72.24	19.22	21.30	3.55	7.72	11.50	8.49	11.41	2.82	1.56	2.15	7.76	4.68	1.24	0.32	3.12	5.95	6.14	6.09	0.77
Fort King, - - -	72.66	22.42	25.69	4.28	10.78	11.64	12.12	10.30	4.47	0.28	7.75	5.50	6.13	0.91	0.40	2.11	8.71	10.83	2.73	1.56
Fort Brooke, - -	73.19	16.02	17.68	2.97	6.69	9.33	6.45	9.57	2.81	0.08	4.79	6.12	3.61	0.53	0.64	1.78	3.97	5.33	4.95	1.01
Key West, - - -	76.09	11.34	14.66	2.44	5.39	5 35	4.43	6.91	4.22	1.56	1.98	3.53	1.29	2.08	1.53	0.17	4.13	3.53	3.15	2.15

III. *The Mean Annual and Monthly Ranges of Temperature.*

Places of Observation.	Mean Annual Temp.	Annual Range.			Mean of the Monthly ranges	Jan.			Feb.			Mar.			April.			May.			June.			July.			Aug.			Sept.			Oct.			Nov.			Dec.		
		Range.	Maximum.	Minimum.		Range.	Maximum.	Minimum.	Range.	Max.	Min.	Range	Max.	Min.	Range.	Max.	Min.	Range.	Max.	Min.	Range.	Max.	Min.	Range.	Max.	Min.	Range.	Max.	Min.	Range.	Max.	Min.	Range.	Max.	Min.	Range.	Max.	Min.	Range.	Max.	Min.
St. Augustine, - -	72.24	59	93	34	23	35	78	43	30	79	49	25	78	53	31	80	49	20	88	68	17	90	73	14	92	78	12	91	79	14	86	72	22	82	60	22	78	56	36	77	41
Fort King, - -	72.66	78	105	27	40	50	83	33	41	84	43	48	87	39	39	93	54	33	97	64	32	105	73	29	102	73	32	104	72	29	99	70	50	91	41	52	82	30	43	79	36
Fort Brooke, - -	73.19	56	93	37	29	34	77	43	35	81	4	35	84	49	35	87	52	23	90	67	24	91	67	19	92	73	19	92	73	23	91	68	32	88	56	32	84	52	40	80	40
Key West, - -	76.09	37	89	52	16	23	80	57	20	81	6	20	85	65	1	84	65	15	87	72	13	86	73	11	88	77	14	88	74	11	87	76	15	85	70	15	80	65	16	78	62

Art. II.—*Contributions to Legal Medicine.* By T. R. Beck, M. D., Professor of Medical Jurisprudence, Albany, New York.

Case I. *Pretended Delivery.*—The following case was tried at the Ontario Circuit in the State of New York during the year (1840.) An action of ejectment, was brought by the widow of Oscar F. C., against two of his brothers, to recover a large and valuable farm. She claimed the farm in fee, as the heir at law, of a child, to which it was alleged, she gave birth after the death of her husband, but which died before the commencement of the suit, leaving her entitled, as heir, to the whole inheritance. The brothers claimed as heirs at law, admitting her right of dower, but denying her having given birth to a child.

It appeared by the testimony, that the plaintiff was married in July 1835, to O. F. C., he being then a ward in chancery, as an habitual drunkard; that he died on the 6th of October, 1837, of delirium tremens, leaving no issue born during his life.

In proof of the birth of a posthumous child, Dr. K., a practising physician at Geneva, Mrs. K., the mother of the plaintiff, at whose house she was, and a sister of the plaintiff all testified that on the afternoon of the 17th of July, 1838, she gave birth to a female infant; that they were present and assisted at the birth; that the child lived about three weeks and then died and was interred in the burying ground of the C. family, on which occasion there was a large funeral attendance, a funeral sermon preached, and the plaintiff's family went into mourning. Mrs. L. a respectable female and near neighbour of that family also testified, that she was present, not at the very moment of the birth, but immediately thereafter; that she saw all the appearances usually observable on such occasions—received the new born infant from the arms of the physician, as he performed the last act of separation from the mother—that she washed and dressed it in the apparel that had been prepared, and placed it in the plaintiff's arms, she being by that time restored to her bed. Many witnesses testified that she nursed this child as long as its health continued, and when that began to fail, the doctor procured a puppy to supply its place at the breast. Much proof was also adduced of the appearance of the widow for months previous to her confinement.

For the defendants, it was stated, that the above testimony was in the main false and that the child was a supposititious one. In support of this, the following testimony was adduced.

A middle aged man was called, who testified that in 1838, and for several years previous, he was the captain of a canal boat, and that a young unmarried woman, who was the maid on board his boat, was discovered in the spring of 1838, to be pregnant, and as he had reason to believe, by himself; that having a family, and being desirous of concealing the transaction and at the same time of providing for her comfort, he applied to a friend in Geneva, to procure a suitable place for her during her confinement. This friend recommended him to Dr. K., and he accordingly saw him. He was asked by Dr. K. when the child would probably be born, and upon being informed, that the birth might be expected in the early part of July—he, the witness, was directed to call again on the following day. He did so, and the doctor then asked him, if he and the girl would be willing to part with the child after its birth, provided it could be well brought up and inherit a large property; that the doctor knew of a widow, whose husband had recently died and if she could have a child within nine months after his death, it would get a large estate. The name and residence of the widow were withheld. The witness partially consenting to the proposition, was requested to bring the girl to the doctor's office, which he did, and after some private conversation between her and the doctor, he left her there, under his assurance that she would be well provided for. Not being entirely satisfied that all was right, he called on the doctor some days afterwards and insisted upon being informed where the girl was, that he could obtain no information on the subject, and thereupon addressed a letter to her, inclosing some money, which was placed in the doctor's hands; that being still dissatisfied, he again called on the doctor, a few days afterwards and threatened to expose him unless he informed him where the girl was; the doctor left his office, and after a short absence, returned and directed him to a neigbouring house, which he understood to be the residence of old Mrs. K.—where he had an interview with the girl, and that he did not see her again until the latter part of July, 1838. He left her with the doctor about the middle of May. The witness also testified, that some time after, the girl was delivered of a child, and in the latter part of July, or the first of August in the same year, he had a conversation with the doctor, who stated to him that the child lived eight days, and that after its death, he buried it in the burying ground, about midnight.

The female referred to by the last witness, was next called and testified to her going to the office of Dr. K. That he told her in a private conversation, that if she would part with it as soon as born, he could make it heir to a large property, and have it brought up without any care on her part. She neither assented to, nor rejected this proposition. The doctor took her to the house of Mrs. K. where she remained until the 17th of July, when she gave birth to a child, which was immediately taken out of the room where she was, by a sister of the plaintiff, and that she had not seen it since; that the doctor, and mother, and sister of the plaintiff were present at the birth. They had all told her that the child died immediately after it was born, and the doctor said he had buried it. She remained at Mrs. K.'s nine days after the birth of the child, when she was removed to a place, a few miles distant, provided for her by Mrs. K. While at Mrs. K.'s, she was kept in a room up stairs, without being permitted to go into the street, or look out of the window, or see any person except the family. She knew that the child was born alive, for it cried twice before it was taken out of the room, and she heard a child cry every day down stairs, after that, as long as she remained, but had not heard any thing of that kind previously. She was positive that her child was *born during the afternoon of the 17th of July.*

Several witnesses also deposed that they had not observed any enlargement in the plaintiff until some time in the month of May.

To rebut this testimony, Dr. K. stated, that he had received the last witness, at the request of the captain, and obtained board for her at Mrs. K.'s because it was convenient to attend her at the same place where he was attending the plaintiff—that she had a male child there, and he was present at its birth—but that it was born on the 19th of July, two days after the plaintiff was put to bed;—that the child died as soon as it was born, and he took it to his office and put it into a jar of spirits to preserve it, but the spirits not being strong enough, it "spoiled." The mother and sister of the plaintiff again corroborated the statement of the Dr. in all its particulars.

After a full and able argument by counsel, the case was committed to the jury, who in a few minutes returned a verdict in favour of the defendants.

The above narrative is taken from a newspaper report, but I have reason to believe that it is substantially correct. I have been informed by one of the counsel for the defendants, that a strong point against the physician was his inability to account for the remains of *two* children. Had he been able to designate any place where the second was to be found, search would instantly have been made for it.

Conceding that the verdict was just, it is easy to explain how Mrs. L. was called exactly at the moment when her testimony would prove available.

It is not among the least curious incidents in this case, that the mother of the child was subsequently well married, and that her husband was unaware of her previous condition, until the subpœna was served on her. On being informed of it, he consented and indeed insisted that she should obey the process of law and disclose the whole truth. The plaintiff and her friends probably came into court, with the idea that the circumstances relative to the girl were totally unknown to all, except themselves and the parties immediately concerned, and these last, they doubtless supposed, would not be desirous of exposing themselves. Such was, indeed, the fact, and the subpœnas were actually issued, without being aware of how much importance, the testimony of the captain and the female might prove.

Case II. *Poisoning by Arsenic. Sudden Death.*—A melancholy instance of this description recently occurred in my own family. Some of the facts are deserving of record, and as the case will best be understood by a narrative of the attendant circumstances, I give these in detail:—

Harriet F. came on the 10th of March, 1840, as a chambermaid, with good recommendations. She was about 24 years old, a native of England, and a resident of this state some four or five years. Her conduct was unexceptionable, being but little given to visiting, and receiving very few visitors. About the middle of June, however, my attention was called to her appearance, and it immediately struck me as equivocal. I caused a private communication to be made to the female who had recommended her, of my suspicions of her pregnancy, but the idea was scouted as altogether impossible. Still, not feeling satisfied, and thinking it best to err on the safe side, I had her notified that I should have no further occasion for her services after the expiration of the month, viz., the 10th of July. She received this without any unpleasant feeling, saying that she had herself intended going into the country very shortly.

Nothing occurred until the 8th of July, two days previous to the above term, when about half past eight A. M., a female (who I afterwards learned had had a private interview with the maid in the kitchen,) desired to see me. She was extremely agitated—stated that she was a married woman—that

H. was pregnant by her husband, and that these parties were concerting a plan to elope together into the country—and finally requested me to detain the maid's clothes in order to prevent this. After some questioning, I declined doing this, saying, that if all this was so, I wished H. to leave as soon as possible, and certainly had no right to detain any of her property. With this she left me, threatening to send an express to the father of H. who resided some thirty miles in the country, and inform him of the above.

About half past ten, Harriet came up stairs, and stated to one of the family, that after the above scene, she did not think it right to remain, and asked whether there would be any objection to dismissing her. A ready consent was given and her wages handed to her. Immediately after this, she put on her hat and went out of the gate. The cook stated before the coroner's jury, that she could not have been absent more than ten minutes, and it is now ascertained that during that time she went to a druggist's near by, and purchased an *ounce* of arsenic. On her return, she went up the garden, and continued so long, that, in consequence of a friend calling to see her, she was sent for. This friend who had just become acquainted with the charges made by Mrs. D. urged her to leave, and that, if any thing was wrong, she would procure lodgings. She consented, and went into the bedroom for the purpose of packing up, and closed the door after her.

My family supposed that she had left, when at half past one o'clock, the cook sent up word, that Harriet was still down stairs quite ill, and that she had been vomiting and purging. I was shortly after sent for, and found her lying on the bed, apparently very drowsy, and unable to speak, except in unconnected sentences. On being asked what was the matter, she replied, "I don't know what you say," and repeated once or twice, "Oh! I shall die." My first impression, I confess was, that the agitation of the morning was about producing abortion, but on continued examination, I inclined to the suspicion of poison. The eyes were extremely bloodshot—she complained of scarcely any pain, and appeared rapidly sinking—although sensible when addressed. I requested the attendance of my friend, Dr. Wendell, but before he arrived, in answer to the earnest adjuration of one of the females with her, as to what she had been taking, she answered with difficulty "*arsenic.*"

For a case so decidedly moribund, but little could be done. It was too late to prepare the hydrated oxide of iron, and we therefore exhibited magnesia diffused in water, which she swallowed with great difficulty. An attempt to bleed her failed; the body was rubbed with stimulants, but she rapidly sunk and died without any convulsion or apparent pain, precisely at half past two o'clock.

No vestige of the purchased arsenic has been discovered up to this time, and the probability therefore certainly is, that she swallowed nearly the whole, and that in the dry state.

An examination of the body was hardly practicable, in consequence both of the state of my family and the heat of the season. The coroner's jury were, however, fully satisfied of the existence of pregnancy, and this was probably advanced about six months.

The points of interest in this case, appear to me to be the following. 1st. We have the effects of arsenic in large quantity, uncontrolled by the interposition of any remedies; and the symptoms, so far as they can be ascertained, were copious vomiting and purging, which, however, ceased an hour, if not more, before death; but little pain; bloodshot eyes, the countenance natural, and certainly not more suffused, than from the ordinary operation of an emetic; extreme faintness, without any thing that could exactly be called stupor; sinking, and the absence of convulsions. How strikingly these correspond with the appearances ordinarily observed in persons who have died within a few hours from the above cause, will be seen by referring to Christison on Poisons, third edition, p. 286, or Beck's Medical Jurisprudence, sixth edition, vol. ii, p. 371. 2d. The sudden fatality. It is not possible that more than four hours could have elapsed from the time of taking the poison to her dissolution, since she did not leave the house until half past ten. If she swallowed it while in the garden, (and this is the most probable,) it was somewhat within that time; if in the bed room, it could scarcely have exceeded three hours. I subjoin, for comparison, the cases collected by Christison and myself.

1. Dr. Smith, New York Medical and Philosophical Journal, vol. iii, p. 6. *Eighteen hours.* Dr. Christison says *eight*, but on referring to the original, the other will be found to be correct.
2. Metzger. Christison, p. 287. *A few hours.*
3. Dr. Christison, Edinburgh Medico-Chirurgical Transactions, vol. ii, p. 298. *Five hours.*
4. London Medical Physical Journal, vol. xxxiv. *Five hours.*
5. Dr. Gerard, Revue Médicale. *Five hours and upwards.*
6. Orfila, Archives Générales. *Nine hours.*
7. Mr. Holland, London Medical Gazette, vol. xv. *Eight hours.*
8. Chaussier, Orfila's Toxicology. *A few hours.*
9. Mr. Macaulay, Christison, p. 289. *Two hours.*
10. Mr. Wright, Lancet, vol. xvi. *Four hours.*
11. Morgagni. *Twelve hours.*
12. Laborde, Journal de Médecine. *Nine hours.*
13. Dr. Gould, Boston Medical Magazine. *Seventeen hours.*
14. Mr. Coates, London Medical Gazette, vol. xx. *Four hours.*
15. Mr. Joseph Thompson, Lancet, No. 792. *Six hours.*
16. Mr. Pettigrew. See his life in the Medical Portrait Gallery. *Seven hours.*

In Mr. Wright's case, an ounce of arsenic was taken, in Mr. Coates' two ounces, and in Mr. Macaulay's Dr. Christison says, "the individual died with narcotic symptoms only, within two hours, after taking nearly a quarter of a pound of arsenic."

CASE III. *Protracted Gestation.*—I am indebted for the particulars of the following case, and the accompanying comments, to my friend *James R. Manley*, M.D., of New York, the physician in attendance.

"Mr. and Mrs. G—— are Polish exiles of excellent education and morals, and highly esteemed among their acquaintances.

"Some time in February, 1840, Dr. Manley was requested to take charge of Mrs. G., as she expected to be confined about the 10th or 15th of April ensuing. She had previously been his patient having treated her for hæmoptysis. On the 7th of April, however, he was sent for to prescribe for another and violent attack of the same complaint. She was bled twice largely, kept on a low diet, absence from all stimuli, even light, &c., for about three weeks, in the hope that her daily expected confinement would be her chief security against the ordinary consequence of her disease, viz. consumption. The treatment was successful, the cough and hæmorrhage ceased, but the parturient effort was deferred until the 29th of May.

"As you may well suppose, this created much anxiety in the minds of her friends, whether viewed as a moral or physical question, and I became unusually interested in the result. On close inquiry, I satisfied myself of the following facts. 1. Her husband had left her on business on the 13th of July, 1839. 2. He did not return until the last of November. 3. During the first three months of pregnancy, she was twice unwell or menstruated, but as she was 39 years old, and had borne six children, and the amount was trifling, she, in place of deeming herself pregnant, thought it furnished evidence of the approaching cessation of the function, and particularly as the ordinary accompaniments of previous pregnancies, viz. sick stomach, toothache, &c., were altogether wanting; but 4. On the 30th of November, she felt quickening, which, allowing four and a half months for the mean time of the appearance of that sign, made her reckoning for the 15th of April correct. 5. On the nights of the 12th and 13th of December, she was attacked with hæmoptysis, for which I treated her by bloodletting and the negation of stimulants and nutrition, and was successful. The occasional hæmorrhage continued however for nearly three weeks. 6. On the 7th of April, as before observed, she was again seized and treated successfully. This was a violent attack, and the treatment was carried to a greater extent than before.

"About the 16th of April, having occasion to leave home, I put the patient under the care of my friend Dr. Duvall, in whom I could place the utmost confidence, believing that she would be confined every hour, as she complained of pains, which I presumed were premonitory, though not parturient. When I returned after an absence of three days, I found things as I had left them. She complained of much uneasiness *in perinæo*, and told me that Dr. D. had ordered an enema, which could not be administered from inability to insert the pipe of the instrument; said that she was sitting upon the child—that if she got up and again sat down, she felt unpleasant, as if something was pressed upwards. About the first of May, so much anxiety was manifested by her friends, that without my knowledge, Dr. S. was requested to visit her, and after examining into her condition, was sufficiently satisfied to pronounce that she was not pregnant *with a child*, although she might have hydatids or a mole *in utero*. As soon as I was informed of this opinion, I lost no time in satisfying myself concerning her condition. I made a thorough examination by auscultation and the sudden application of the cold hand to the abdomen. The result was such as could not deceive, and I pronounced her pregnant and near delivery, which might take place within two hours, as the head of the child rested, I may almost say, on the perinæum, and the os tincæ was dilated larger than a dollar. The head was so wedged, that every attempt to pass by the side of it, produced excessive pain, although the patient complained of nothing but pain in the pelvic region. This particular examination was made about the 6th or 8th of May. She continued in this state, enduring more or less pain every day, till the 29th, when she was happily delivered of a son weighing 9¾ pounds.

"There was nothing peculiar in her parturition, except that it was a forehead presentation, and the cord was so convoluted, and entangled the child so much, as to leave but seven or eight inches of its length, being twice around the neck and once around the abdomen. When the waters burst, they came away with a great deal of meconium—calculated to lead to the impression, that there were twins in utero, and that the membranes of each had ruptured, since it is, I apprehend, a very rare occurrence, to meet with the alvine fœtal evacuations in cases of head presentations. The posterior fontanelle was obliterated, and the anterior was very small, not exceeding the size of a five cent piece. The child was remarkably strong, and the papillæ of what is denominated red gum, were in many places marked by yellow points, as is usual, when children are a week or more old. The labour was short, but excessively painful, by reason of the presentation, and the placenta was detached at the time of birth.

"The above recited case presents an extraordinary exception to the general term of uterogestation, and if exceptions can impair the obligation of a general rule, this is one of such a peculiar character, as cannot fail to have its influence in modifying the opinions of the profession; as facts of this character are by far too serious in their consequences to be permitted to pass unnoticed. The laws respecting the legitimacy of offspring have by common consent settled upon a term of gestation considerably within the limit which this case presents, and this adds materially to its importance. Perhaps no facts can be better authenticated than those above stated. The character of the female is above suspicion; the simplicity of the account which she gave long before such a result could have been anticipated; her anxiety about the event, the opinion of a distinguished surgeon and accoucheur notwithstanding; all prove the sincerity of her expressed convictions, and render the detail peculiarly interesting.

"The reflections suggested by this case, naturally arrange themselves under two distinct divisions, which may be stated interrogatively thus:—First. Can diseases, or the treatment necessary for their cure, have an influence in protracting the term of gestation? Secondly. May not protracted gestation be often confounded with protracted parturition, and be the cause of many of those anomalies which the subject of gestation presents? We know that diseases have an influence in shortening this period, as we are frequently called to prescribe remedies with the single view of preventing abortions and miscarriages, and we treat them successfully even after the parturient pain has continued for a considerable time, and that, if need be, we persist in our remedial measures so long as the membranes continue entire, without reference to the condition of the uterus itself; and if medical treatment can arrest uterine action, after it has commenced in premature labour, may not the same treatment, used for other reasons, produce such a condition of the female system, as will delay the advent of a natural labour, after the contents of the uterus have attained their maturity, or after the period has arrived when the parturient effort would naturally be made. The usual term of gestation is 280 days, but children are frequently born, and live, or to use a significant phrase, they are *viable* if expelled at the end of thirty weeks, and thirty-five or thirty-six weeks is a period of gestation not unusual in cases of first pregnancies. Why the over-running of the usual term should be considered so extraordinary, when falling short of it is so common, more especially when the evidences of the infant's detention, are as apparent to the senses, as the evidences of premature birth, is only to be explained on the ground that law has settled the one on principles of policy, and left the other open, as it requires none of those legal safeguards which are presumed to be essential to the protection of hereditary property; and it is easier to conform our opinions to some settled rule, than be at pains to examine individual cases by data, which may or may not be received, where private interest or public prejudice, combine to admit or reject their application. The laws respecting legitimacy of offspring, which limit gestation to 300 days, may be, and I doubt not are, wholesome ones in their operation: some bounds must be set; and the nearer they are fixed to the duration of the ordinary term, the greater is the security of public morals, since their extension would offer facilities to adulterous intercourse, which would be incompatible with the public welfare; nevertheless, it is as much an obligation of duty, as it is a dictate of humanity that the evidences upon which these anomalies rest should be carefully examined, that the stain of bastardy on the one hand, and the loss of reputation on the other may not unreasonably attach to the child or mother. The facts above stated in relation to Mrs. G——, are as true as demonstration could make them, and by them, it appears that she carried her child 10 months and 13 days, but they admit of easy explanation, if we allow the treatment which was rendered necessary during her two attacks of hæmoptysis to have had any agency in suspending the process of fœtal growth and uterine evolution; for after all is said, it is not certain that any other cause than the maturity of the fœtus determines the natural period of gestation. The appearance of the child at birth; its size and weight: the obliteration of the posterior fontanelle, and the very small aperture of the anterior one; the appearance at birth of that peculiar eruption denominated the red gum, (*strophulus intertinctus*,) and the matured character of it, for the vesicles were filled with an opaque yellow serum, all render it probable that the infant was detained in utero beyond the usual time.

"But it may be objected, that the explanation proves too much, since, on the assumption that the debilitating treatment of the pregnant woman prevented the child from attaining maturity in the ordinary period; it ought not to have presented any extraordinary appearance at the time of birth, and the exception is well taken, if the case was permitted to stand without additional evidence; that additional evidence may perhaps be found in the answer to the second interrogatory.

"I am not aware that any distinction has been attempted to be made between delayed, deferred, or protracted *parturition* and protracted *gestation*, neither does any appear necessary except for medico-legal precision, and it must be confessed that it is of the utmost consequence. Protracted parturition is a common occurrence, and from the nature of the case can scarcely pass unobserved; it is far otherwise, however, in protracted gestation. The commencement of the one is well marked, whereas the other, under circumstances of married life, and by reason of the feeble and indistinct manner in which conception manifests itself, is only known by symptoms which have place after the lapse of many days. It is a law of *being* as constant as any other law which controls physical action, that labour should be a painful process, and the reasons for this are too obvious to require to be stated; nevertheless cases do not unfrequently occur, where the law appears to be suspended. Women have been known to be delivered of their children without experiencing any of the pains of the first stage of labour: they have been delivered, without any painful premonition, in the street, in carriages while proceeding from one place to another, in the porches of churches, nay, while sitting with their families at the dinner table, (a case of which occurred very lately in this city,) and every practitioner of midwifery with even limited experience must have witnessed cases in which delivery was accomplished by a single parturient effort. Now in these cases it is reasonable to suppose that the first stage of labour was attended by so little suffering, as to have escaped observation, and although the relaxation of the internal parts, the dilatation of the *os uteri*, and the contraction of its fundus and body are the work of time, it was accomplished even without the knowledge of the patient or the accoucheur. It has frequently happened in my own experience that a labour has commenced and progressed painfully till the pressure of the child was felt *in perineo*, when the pain has entirely subsided, and the patient experienced no uneasiness, except from pressure, for two, three, or four days, and in two recent instances, this condition continued a whole week, and when pain did recur, the same effort which ruptured the membranes, expelled the child. There is confessedly much variety in the character of labours, and scarcely two are alike among twenty consecutive cases. In the present instance I instituted no special examination, till I was informed that a surgeon had visited my patient and pronounced that she was not pregnant with a child.—It was early in May, that I made this examination and I found the *os uteri* much dilated and the head of the child resting *in perineo:* no labour pains had been felt, nor did pains of any kind which could be mistaken for labour occur till the morning of the 29th of May, about three weeks afterwards. The labour, however, was a painful one and continued five or six hours, which I attributed to the position in which the child presented. If the presentation had been of the vertex, I doubt not that she would have been confined in a short time and with little suffering: and I cannot doubt, that but for the same cause, she would have been delivered three weeks before. In this event, neither her labour, nor her gestation would have had any extraordinary features, but would have passed, either entirely unnoticed, or would have attracted very little attention." Yours sincerely,

JAMES R. MANLEY.

Dr. Theo. R. Beck.
New York, *September* 18*th*, 1840.

Art. III.—*Remarks upon Dyspepsia as connected with the Mind.* By Austin Flint, M.D., of Buffalo, N. Y.

Having perused, in two of the late numbers of the American Journal of the Medical Sciences, the articles by Professor Chapman, with the attention and interest which the eminence of the author, and their intrinsic value claim, I may seem to expose myself to the charge of presumption in presenting the following remarks. It is, therefore, proper for me to state, that having for several years had occasion to study the symptoms of that form of gastric derangement, known under the term *dyspepsia*, by means of *personal sensations*, I have, in consequence, been led to examine with peculiar interest other cases of an analogous character. This has led me to entertain some views respecting this affection which I do not recollect ever to have seen fully expressed, and which I have thought may possess some interest and importance. I offer this as an apology for a communication succeeding the publication of the articles above alluded to.

The characters of this disease derived from its influence upon the mind, have, of late years, received considerable attention. This branch of the subject, however, offers still ample scope for investigation. It is, in truth, a very important subject, considered with reference, not only to its pathological character, but also its moral, intellectual, and social relations.

My remarks, limited entirely to this view, will relate, 1st. To the character of some of the more prominent symptoms of the disease.

2d. To the circumstances derived from the mind which seem to originate and prolong it.

3d. To some of the therapeutic indications derived from the considerations presented under the first two heads.

1. The mental aberrations connected with this disease are exceedingly numerous and diversified. This, probably, is not so much owing to the differences which are, strictly speaking, pathological, as to the modifications produced by different habits, and associations, the influence of education and particular pursuits, and the peculiarities of mental constitution.

A state of unhappiness, varying in degree from a slight gloom to intense wretchedness, is common to every variety. But, from the various influences of the causes just enumerated, this will in particular instances develope itself in different forms. In its lighter shades, this condition is indicated by "depression of spirits," a disposition to dwell upon gloomy topics, to view every thing upon its darkest side, and a general feeling of discontent and dissatisfaction.

When more fully developed and confirmed, the mental condition is so strikingly portrayed by the eloquent author of "*self education*" (Degenando), that I cannot forbear quoting it in this connection.

"There is another and far different trial of strength of character, which threatens it in the very point where it should find support; it sometimes happens, that the government of our own faculties is partially withdrawn from us, without our being able to resume it. This is observed, for example, in certain nervous affections and maladies, which without producing real alienation of mind, yet so sensibly alter the play of our organs, that the soul which employs and depends upon them, inevitably feels an inward and peculiar malady. Objects change their colour and form; vague, involuntary and unsought terrors take possession of us, leaving us no power to master them. In vain we call to our aid the recollections of the past, and the prospects of the future: the first only heart-rending regrets, the latter only mournful images. We wish to take refuge in moral meditations, but the sanctuary is closed; we seek the objects of affection to be reinstated by their presence, but they seem to be covered with a funeral veil, and, in spite of itself, the soul doubts of their affection and its own. This is a sort of delirium, not entire, but more painful to him who feels it than total alienation of mind: for he is conscious that his faculties are in disorder; he sees his own difficulty, yet, is impotent to restore the harmony.

"The affliction caused by this inward spectacle redoubles the horror of his situation. What a singular trial of virtue! who has described such a state? who has pointed out the regimen that can bear us through it unharmed? It is doubtless extraordinary and consequently little known: it cannot be imagined by those who never felt it."

The intensest grade of this disorder, cannot, perhaps, be more forcibly expressed, than by the language which the unfortunate poet Cowper employs in giving a transcript of his own sensations. "I awake in the morning, (says he,) like a toad out of *Acheron*, covered with the *mud* and *ooze* of *melancholy*."

One of the most common aberrations (which is alluded to in the former quotation) consists of a certain undefined sense of fear and apprehension. There seems to exist a state of mind somewhat resembling that of a child whose imagination has been excited by stories of supernatural agencies and adventures; and this may occur, not in those whose mental powers are feeble or uncultivated, but in individuals of an opposite character. A clergyman of vigorous and disciplined intellect, in connection with derangement of the digestive organs, declared, that he experienced an extreme dread of being alone, and of sleeping in a lonely apartment; at the same time that the strength of his intellect was unimpaired as evinced by his discourses and conversation.

A medical friend recently informed me that a similar condition is uniformly associated with paroxysms of gastric derangement to which he has long been subject. At such times, a sudden professional call produces the feelings and physical symptoms of terror. He experiences apprehension in meeting individuals in the street as if they were disposed to attack him. At the same time, he is sufficiently convinced of the absurdity of such a condition, nor does he feel sensible of any diminution of capacity to exercise the duties of his profession. Nevertheless, he cannot divest himself of these feelings.

I mention these two instances as illustrations of a state of mind which I have known to exist in numerous cases, varying in degree and in some of its features, but essentially analogous in all.

Another species is the persuasion of the existence of some imaginary disease. The kind of disease will depend upon the patients' knowledge of the nosology. Those who have had occasion to observe the progress of certain diseases, will, probably, fix upon one or more of these. If a selection is made, it will be that of the gravest character. *Phthisis* is often imagined, and the imagination is as assiduous in contriving evidences with which to convince the reason of its existence, as it is to produce an opposite conviction when the disease is actually present. Another disease often fixed upon is *organic affection of the heart*, and this idea receives constant confirmation from the sympathetic irregularities of this organ, which generally attend the disease under consideration.

Dyspeptics are also apt to imagine some disease of the *generative organs*, and it is truly surprising, as it regards this and other diseases, to observe, how the slightest circumstances will be converted into the most conclusive evidences, and how easily and deeply their fears are excited.

A gentleman who had happened to know of the existence of the prostate gland and of the difficulties incident to its enlargement, suffered slightly from hæmorrhoids in connection with derangement of the digestive organs; but he could not be persuaded that the prostate gland was not enlarged. Afterwards the same gentleman conceived the idea that one testicle was schirrous and actually solicited its removal. It was found exceedingly difficult to remove this impression.

Whatever be the character or location of the imagined disease, the aberration is characterised by the absence of that *hope* which usually attends the actual existence of the fancied diseases. A dyspeptic under this infatuation, rarely hopes. He not only believes the existence of the disease, but, that he is doomed to become its victim.

Another mode of the influence exerted on the mind is a peculiar inaptitude to exertion, corporeal and intellectual. Volition is a painful effort; and to concentrate the mind upon any point is a work of great difficulty. Individuals thus unhappily affected, feel unfitted for situations which require vigour of the reasoning faculties, or the combined energy of purpose and action. They shrink from that discipline and exercise which the powers of body and mind require. They manifest a deficiency of interest in all those events to which most persons are alive, and are insensible to the occasions of enthusiasm and fervent emotion.

The intimacy of connection between the mind and stomach, is strikingly manifested by the temporary diminution of intellectual and physical energy, which sometimes occurs in dyspeptic patients during a laboured digestion. It seems to be analogous to the prostration which exists in fever. The powers are not absolutely lost, but, as it were, borne down by a weight which the patient has not resolution sufficient to throw off. An unusual motive to exertion, or a cause of excitement, will sometimes cause it to disappear, and it spontaneously passes off after digestion is accomplished.

Such are some of the more prominent mental features of this disease. To describe them, so as to embrace the circumstances of particular cases, would require much more space than all my remarks will occupy. To do this in an essay upon the subject is rendered less important than it might otherwise be, by the fact, that, when the unfortunate dyspeptic receives from his medical adviser any encouragement, he is far from being disposed to conceal his sensations. To amplify upon them, is, indeed, one of the characteristic circumstances attending the disease.

A consideration of much practical importance, arises from the absence, in many cases, of symptoms, indicating in a very distinct and obvious manner, the existence of physical disorder in connection with these aberrations of mind. They are often so slight as to deceive the patient, his friends, and the physician. Especially is this liable to happen at the commencement of the disease. In a large proportion of cases, the effects exerted upon the mind are the first symptoms which declare themselves with sufficient prominence to attract attention. A change in the disposition, feelings, and habits of the individual, is remarked by his friends; and, if he be accustomed to self-examination, he becomes conscious of it himself: but this is frequently attributed either to a natural revolution of character, to extrinsic circumstances, or it more often is deemed unaccountable.

The morbid affection of mind is not generally sudden. Persons are gradually and imperceptibly betrayed into the disease. When the discovery is made that this is the difficulty laboured under, the patient is generally satisfied that he has been a dyspeptic for some time without suspecting it; and, perhaps, he cannot date the period of its commencement.

Even after the disease is confirmed, there seems to be often a want of correspondence between the degree to which the mind suffers and the disturbance of corporeal functions. The latter may have so little prominence that the patient may not regard his case as one admitting of medical aid; and the physician, unless conversant with the disease as developing itself by its influences upon the mind, may regard it as without his province.

This is the more important, because, there is reason to believe, that an early employment of judicious means would prevent the establishment of a disorder, which, when confirmed, is, certainly, one of the most difficult to remove.

Before passing to the second head, I would make a few remarks upon the importance which the symptoms, thus briefly described, derive from their relations to the moral, intellectual and social character of the individual. If it be true, that, to the extent already supposed, the obstructions and embarrassments of the moral and intellectual powers, ordinarily attributed to the perverseness of human nature, are dependent upon certain morbid influences derived from the body, it is a matter of great importance: but its importance is vastly increased, when we follow out these influences to their extreme results. Is it not probable that the same influences which produce that dejection and melancholy which have been mentioned as common to all cases of dyspepsia, when exerted under certain circumstances or in peculiar constitutions, lead to that painful sense of the weariness of life which impels to suicide, or that disposition to ponder on the miseries and vices of mankind which is cherished by the misanthrope? Do they not sometimes induce a state of recklessness which may eventuate in the sacrifice of character and self-respect, at the shrine of sensuality? In a still greater degree of intensity do they not produce confirmed insanity?

In like manner, that susceptibility to vague apprehensions and superstitious fears which has been described, may, perhaps, in some instances, prepare the way for the extravagances of fanaticism and religious frenzy. A disposition to believe in the presence of imaginary diseases, may easily result in confirmed hypochondriasis.

And in that inaptitude to exertion, mental and physical, which is peculiar to this disease, exist the elements of these qualities, which stamp the character as indolent, inefficient, weak, cold and selfish! If there are reasonable grounds for believing that these relations actually exist, it must appear that the subject has not received that degree of attention which it merits. It cannot be doubted that this branch of philanthropic effort is too generally neglected by physicians.

2. I proceed in the second place to consider some of the circumstances connected with the mind which appear to have important influences in originating and prolonging the disease.

The relations of the digestive organs and mental powers are such, that they exercise a reciprocal influence upon each other. Hence, it has not escaped observation, that the causes of dyspepsia may spring, primarily, from the mind itself. It may be deemed a matter of doubt, whether the deviations from a healthful condition of the mind, may not bear to the gastric derangement, the relation of *cause* instead of *effect*. A close analysis will, however, in all cases, show, that the former arise consecutively; nor do we find these peculiar aberrations present without this connection, which would be the case were they produced by moral agencies uncombined with physical. We are then forced to conclude that they are diagnostic of a certain morbid condition of body. The condition of such, in this disease, is, indeed, so unlike any, which is the result of causes affecting directly the mind itself, that a practical observer cannot fail to distinguish it without any examination of organs and their functions. Yet there is reason to believe, that we are to look into the mind for the circumstances which predispose to and in many cases, are chiefly concerned in, producing the disease, and which, in all cases, assist in its continuance. Some of these, as it seems to me, have been generally overlooked. A dyspeptic presents himself to a physician and states his sufferings. The physician inquires concerning his habits, mode of life, &c. He ascertains that he has indulged his appetite for food and drink without much discrimination, and at all periods, has neglected to take exercise, &c. He exclaims at once, "it is not surprising that you have dyspepsia," and he recommends him to reform his habits. If the patient follows this advice perhaps he recovers his previous health without difficulty. Shall we then say that dyspepsia generally arises from dietetic errors? This, probably, is the common doctrine; but I am disposed to doubt its general applicability. How many are there who pursue such a course for a great length of time, perhaps during the whole period of life, without becoming dyspeptic, when, as far as we can judge, there is no reason to suppose their immunity is owing to a better constitution or stronger power of endurance!

On the other hand, how many with the utmost care and prudence become and continue dyspeptics!

It is not to be inferred that irregularities and intemperance are not common causes of this disease. In the poorer classes, it may, perhaps, generally be attributed to these, conjoined with destitution, bad food, sedentary occupations, close or pernicious atmosphere, exposure, &c. In the will to the abuse of luxuries, with love of ease. But there is a class who do not want the comforts of life, and who do not indulge in luxurious excesses, and observation shows, that in this class dyspepsia is not only common, but peculiarly obstinate and persistent.

This is an important fact in relation to the disease. A poor person, if he be better fed and clothed, his habits and the circumstances about him improved, is restored. A rich man, if he curtails his pleasures, uses more exercise, engages in healthful occupation, may, in general, expect the speedy return of good health and spirits. But the class between these extremes, who are already clothed and fed, who have no excesses to curtail, find, whatever course they may pursue, that to overcome their difficulties, requires not a small degree of care and perseverance.

Physical peculiarities of constitution may explain this in some cases, but, in general, it seems to me, that the explanation is to be derived from the connection of the disease with the mind.

This class, it is to be observed, as a general remark, embraces that portion of mankind, who are disposed more or less to occupations or pursuits which involve in a greater degree than in the other classes, the exercise of the intellect. Dyspepsia, it has been always observed, is more liable to seize upon those who are thus disposed, and two reasons have been assigned for this preference; viz: 1. The sedentary habits which these pursuits and occupations generally involve. 2. Reasoning from the well-known sympathy which exists between the brain and stomach, to excessive or disproportionate cerebral exercise.

There can not exist a doubt that the former play an important part in the production of, and predisposition to, the disease, but with regard to the latter, so far as I am able to judge from my own observations, it is rarely a cause of the disease, excepting in as far as it involves the former.

Among literary men we do not find that they are so liable to the disease who are in the habit of intense, prolonged, or frequently repeated intellectual exertions, although accompanied with much excitement and perturbation, as those whose exertions are of a *plodding* character; and these generally seem to suffer in the way as some artisans, viz., from the deficiency of muscular exercise, the invigoration of the atmosphere, &c.

On the other hand, *deficiency of intellectual exertion* as a cause of the disease, seems to have escaped observation. I have been led to think that this in certain mental constitutions peculiarly predisposes to dyspepsia.

"Mind tends to action," or, to quote the expression of another physiologico-philosopher, exercise or action is a "want" of the intellect. This tendency or want will exist in proportion to the extent of the mind's capacity for exertion, and, like all the instinctive impulses and demands implanted in the human constitution, it must be fulfilled and gratified, or the economy will suffer.

That the peculiar morbid phenomena which constitute dyspepsia, are, in a great number of instances, produced by circumstances which repress or obstruct the exercise of a degree of the energy of mind adequate to claim, I feel assured observation with reference to this point will show to be, at least, highly probable.

With regard to the character of these circumstances, as well as the tendencies or wants of the individual mind, they are, to a certain extent, peculiar in every instance. A general description could not be given, which would embrace the facts of every case. But, agreeably to the general view which I would present, if we carefully examine the history of the cases which fall under our observation, we shall find that a large number of them, although in their details or particulars they may differ, are, nevertheless, to be associated, as it regards the causes which have produced and which perpetuate them under this common principle.

Nor is it intended to apply these remarks exclusively to those who are pre-eminently intellectual persons. The mental energy may be expended on other than literary and scientific objects—in the performance of any occupation not wholly mechanical, in the fulfilment of the various responsibilities of life; and its obstruction as it regards the latter may be attended with the same results as in the former case.

According to this view, the disease under consideration, is consequent to the unnatural condition in which many individuals are placed as it regards the exercise of the various faculties and powers of mind; or, in other words, to a want of correspondence between the mental constitution and extrinsic circumstances. By the term *mind*, and the expression *mental constitution*, I would embrace all that appertains to the moral as well as intellectual powers and faculties. My remarks have had more particular reference to the latter, but in many, if not the larger proportion of individuals, the wants of the moral nature—the affections and sentiments—predominate over those which are purely of the intellect, and there is reason to believe that similar results may follow *their* obstruction or perversions. Indeed, it is probable that instances of the latter are more common than of the former.

It may be said, on the supposition that this explanation of the origin of the disease be correct, why are not its peculiar aberrations the direct effect of causes operating on the mind, without the intervention of the digestive organs. This is not probable in the first place, from the *constancy* with which they are associated with derangement more or less of these organs, together with their *distinctive traits;* and in the second place, it is not presumed that *all* cases of dyspepsia originate in this manner.

The successive agents, then, in the development of the disease will be *threefold:—*

1. The operation of the mental causes.
2. The affection of the digestive apparatus.
3. The reaction of the latter upon the mind, producing those mental aberrations which characterize the disease.

From this doctrine is derived a sufficient explanation of a fact which has been mentioned, viz., that dietetic errors are persisted in often with impunity by those whose strength of constitution and powers of endurance are apparently no greater than of those who suffer.

According to the view entertained, those very dispositions which incline to sense conjoined with a mental condition which is satisfied with sensual indulgences, go far to obviate their injurious tendencies.

3. It remains to make some remarks upon the therapeutic indications derived from the preceding considerations.

Dyspepsia, unlike most diseases, tends, from the natural reaction of mind and body, to perpetuate itself. It seldom furnishes occasion to observe the influence of the *vis medicatrix naturæ.* It is only necessary to appeal to those who have had much practical acquaintance with the disease for confirmation of this remark.

It is also well known, that in numerous cases, all the various modes of medical treatment recommended, accomplish but little toward restoring the patient to a healthful condition. The truth is, in the majority of cases, the patience of the physicians is exhausted, by the inefficacy of the remedies prescribed; or the patient, after application to different members of the profession, and experimenting with the thousand and one empirical nostrums, relinquishes all expectation of benefit from the materia medica.

But the inquiry arises, if it be true that the disease, in a large number of cases, is to be attributed to causes existing in the mind and its relations, would not the philanthropic physician be able to afford, in many instances, effectual service by suggesting measures which have reference to these, in addition to those appertaining to the materia medica?

It is too common for medical advisers to pay but little regard to the mental aberrations peculiar to this disease, thinking that, in the language of Shakspeare,

> "Therein the patient
> Must minister unto himself."

To examine them with attention, and, if possible, to afford relief, would, under any circumstances, be embraced within that philanthropy which should be inseparable from the practice of our profession, but, since they depend upon physical causes, they are to be regarded as morbid symptoms, and fall, legitimately, within the province of the healing art.

If physicians were more generally and fully impressed with this view of the subject, perhaps the disease under consideration would become less an *opprobrium* than it, confessedly, now is.

It may, then, be stated as the first important rule in the treatment of the disease, to ascertain fully the kind and degree of mental aberration which exists. To listen with patience and sympathy to all the changes of feeling which the patient is ready to describe; if he receives encouragement to do so, is, in itself, a source of much consolation, and goes far to secure to the medical adviser the possession of the entire confidence of the sufferer.

In connection with this, the mental characteristics of the individual, his habits, education, &c., are to be considered, both as enabling us better to appreciate the nature of the changes which have occurred, to decide upon the remote causes of the disease, and to determine upon the measures to be recommended with a view to restoration.

In the second place, it is important to satisfy the patient that the altered condition of his mind and feelings is symptomatic of a morbid condition of body. This is often so little suspected, that his unhappy state is not described until inquiry is made relative to this point. But, as soon as the patient finds it is suspected as associated with the disease, he gladly becomes communicative. It is truly pleasing to witness the surprise and animation which lights up the sombre countenance of the unfortunate dyspeptic, when he finds that the state of his feelings is anticipated by the physician. He seems to hail it as a favourable omen. If the idea has never been suggested that his unhappy condition is the effect of a disordered body, it furnishes the first occasion for hope; and whether restoration is effected or not, he is enabled to resist and sustain his trials with more fortitude and perseverance.

The next object will be to endeavour to remove the causes which have originated or which maintain the disease. But inasmuch as these are very multifarious, and their different varieties have not been considered, the remarks upon therapeutical principles will of course be very general. Each case, in fact, should form a separate study; but in general terms, the patient should be urged to provide that particular kind of stimulus for the intellectual and moral powers, which he seems to require.

In some instances, the difficulty seems to consist chiefly in the monotony incident to routine duties. Then, the indication is to vary their character, or advise a temporary interruption. In such cases, travelling is highly useful; but, frequently, to be permanently efficacious, it should not be confined within a narrow sphere of time or space. Especially foreign travel is useful by the increased excitement and interest derived from the comparison of scenery, and the habits, manners, and institutions of other countries. But this unfortunately is a measure which only in a small number of cases can be adopted. Those means alone can be embraced which are accessible at home. These, however, are not few or powerless. Sometimes it may be proper to advise an entire change of occupation and locality, in order to supplant completely old by new associations. This method, which has been found of such utility in mental derangement, would, probably, be not less so in cases of partial alienation, as these cases must be regarded.

When this is not advisable, or practicable, other measures must be adopted to rouse the faculties of the intellect and the moral sentiments. One of these is the commencement of certain branches of study, or some plan of intellectual effort. Those departments which are pursued by means of observations and experiments rather than abstract contemplations are to be preferred. This will of course apply only to those who have leisure, inclination and capacity for such occupations, and to that class who require more especially excitement of the intellectual faculties.

In other cases, the social and moral sentiments are to be operated upon by the formation of new connections, assuming new responsibilities, and by directing the mind to objects which are calculated to engage the feelings of benevolence and philanthropy—such are politics, the cause of popular education, and the numerous particular plans of every scale of magnitude, tending to the amelioration and improvement of the human race.

The selection of any of these measures, as has been already remarked, will depend upon the combination of circumstances which distinguish the cases individually and is to be left to the discrimination of the medical adviser.

The hearty co-operation of the patient is of course requisite to the prosecution of any plan, and with a view to this the whole subject should be fully discussed and the state of the case frankly stated. One good result will at least accrue from such a course; it will tend to preserve feelings of respect for the character of the medical profession with a class of patients whose experience of it too often leads them to entertain opposite sentimeuts.

Buffalo, *August*, 1840.

Art. IV.—*Two Cases of Aneurism, exhibiting the necessity of a Ligature, both above and below the Tumour.* By Wm. E. Horner, M.D., Professor of Anatomy in the University of Pennsylvania.

Case I. *Varicose Aneurism of the Femoral Artery.—Operation followed by Mortification of Limb and Death.*—Col. P., of Florida, ætat. 30, stature 6 feet 2 inches, usual weight 170lb, while engaged in the service against the Seminole Indians, was wounded, April 15th, 1837, by a ball accidentally discharged from a pistol which he wore under his waistcoat. The ball was rather larger than a buckshot (say 80 to the pound.) It entered the left thigh two inches below, and a little within, the anterior superior spinous process of the ilium, and ranging very nearly in a line with Poupart's ligament, came out on the inner side of the thigh a little below the scrotum.

There was profuse hæmorrhage, estimated at from 8 to 12 pints;—the patient fainted immediately and continued insensible till the next day. An extreme swelling of the thigh followed—numbness and irregular sensations, with some slight bleeding at intervals afterwards.

July 8th, 1837. His present state is one of considerable emaciation, but his spirits are very good. The left thigh has a strongly pulsating tumour just below Poupart's ligament, and in the course of the femoral blood-vessels; the tumour appears to be two or more inches in its transverse diameter, length not so discernible; its pulsation is arrested by pressure on the femoral artery above; also by pressing on the artery at a point corresponding with the track of the ball, and where there is a sensation imparted of a hole in the artery; the femoral vein feels enlarged as it goes under Poupart's ligament, and has a pulsation in it. The superficial veins of the leg are smaller than usual, the saphena scarcely perceptible. To the finger the tumour has the thrill and vibratory motion of varicose aneurism, and a stethoscope applied to it conveys a noise like that of a distant waterfall or mill race, broken in upon by a pounding corresponding with the beat of the heart, and intermixed with a loud quick purring like that of a cat going to sleep. It is extremely sensible to pressure; the extremity is useless; the patient's common position is on his back, with the thigh in a state of semiabduction, and brought a few degrees forward to loosen the parts at the groin.

The pulse of the wrist has a short globular stroke with a very distinct interval; a very strong pulsation is felt in the epigastric region extending to the umbilicus, a feeble wavy pulsation is also felt in the right femoral vein just at Poupart's ligament. The probability is, that the latter, as well as the epigastric pulsation comes from the arterial blood flowing from the left femoral artery into the vein and thus giving a pulsation to the ascending cava and its branches.

11th. He was operated upon in the following manner, by Dr. T. Harris, his attending surgeon, with whom I acted in consultation. A fold of the skin being pinched up was slit in the course of the femoral artery, and by careful dissection, the artery was exposed immediately below Poupart's ligament; the tumour also was partially seen. As much of the sheath of the artery as could be was left; an aneurism needle fastened to a handle, and with a single ligature, was then passed by myself from the outer side of the artery around it, and the artery tied by Dr. Harris. The pulsation immediately ceased in the tumour, the epigastric pulsation also ceased, and that of the femoral vein of the other side; the pulse at the wrist made a longer and more sustained stroke.

The operation was borne with the most manly fortitude. The afternoon and evening were spent in high excitement and restlessness from violent pain flying to different parts of the limb and hip and finally settling in the incision, where the sensation was that of every thing tearing to pieces. It was directed at 9 o'clock to keep four leeches in relays on each temple for an hour, and to give an injection, mur. morph. 0.5 gr. every two hours.

An examination of the venous circulation in the foot at this time, showed that it was going on; temperature of limb extremely low; it had been surrounded by cotton and a warm brick put to the foot.

12th. An exceedingly restless agitated night was spent; took only one injection. The foot and upper half of thigh present the appearance of purpura ecchymotica, from the slow circulation in the veins; slight infiltration of blood. Temperature of upper half of thigh good, below that the extremity is cold. Complains of severe pain in incision and in left testicle. ℞. Pulv. Dov. ℈j; Gum. Arab. ʒj. M. Ft. Pulv. div. in chart No. vi. One every two hours with some hot lemonade. 12½ o'clock more tranquil, has dozed.

13*th*. The Pulv. Dov. has had a most tranquillizing effect; he slept well during the night; stomach slightly sick.

The circulation of the limb very slow, and rather equivocal; a cadaverous coldness of the limb from the middle of the thigh downwards, and especially manifested on the knee. Dover's powder continued; about night he vomited, and was relieved of nausea by it; complaining of colicky feeling in the evening, an injection of warm water was administered which brought away a considerable quantity of gas.

14*th*. Had a tolerably good night; coldness of limb continued. An oblique circle on thigh, about one-third of its length above knee, of extravasated blood, which had showed itself somewhat from the day after the operation, is now more distinct, and seems to indicate an arrest of the circulation of arterial blood there. Beginning about six inches above the knee, and being half an inch wide, this circle passes on each side towards the ham; the foot looks blue and discoloured; the veins from it upwards flabby, and presenting slightly the appearance of an exosmosis of blood along their trunks and branches, such as occurs in the dead body. 9 A. M. Bottles of hot water placed along the limb. 1 P. M. They were discontinued, owing to the inconvenience of fixing them, and bags of heated oats substituted. 9 P. M. Limb warm, of a better colour, and circulation apparently somewhat improved.

15*th*. The cuticle about the knee loosened itself last night, and the warmth of a bag of oats resting upon it, dried up an area of skin where the cuticle was detached, about the size of a dollar.

An evident plumbaceous tint to all the extremity below the oblique circle on thigh (*purpura ecchymotica*); no sensation in it; slight fœtor: exosmosis along veins more spread. Wound dressed, looks well.

16*th*. Symptoms of sphacelus below the oblique circle now fully exhibited in the cuticle being every where loose; with the limb of the colour of white paint turned black by the action of sulphuretted hydrogen gas; entire want of sensation in it, with exosmosis of blood more spread.

The thigh above the oblique circle swollen and extremely sensible. Patient lively; tongue clean; pulse a little more frequent than natural.

In the evening, a healthy evacuation from the use of sulphate of magnesia during the day. Wound dressed; suppurates; looks well.

It may be remarked here that the patient having come to town with an ulcer on the external ankle of the affected leg produced by pressure, this ulcer continued for two days after the operation, as it had previously been very sensible; but from a state of suppuration, it oozed nothing but black blood after the time of the operation. On the 16th, the skin all around it was black and sphacelated.

17th. Disposed to be excitable and flighty, mortified part very black, and boundaries strongly marked. Wound from operation, suppurating well. Sol. chl. sod. to gangrene.

18th. Thigh above mortification extremely sensible, and swollen largely; reddish; veins enlarged with a languid circulation in them, and somewhat of a disposition to exosmosis of blood along their trunks. Mortification advanced of a black colour up to middle of thigh. Has spent a very restless semidelirious night—pulse 140 per minute. Wound has granulated and looks well; with a purulent discharge; latter blackish, however, perhaps from the lead in the sticking plaster.

19th. Mortification progressing upwards; general symptoms about the same with the addition that he is now under the influence of morphia, which is given to him every few hours. The limb is very black and tumid, and would emit a great stench were it not for the solut. of chl. of sod. which has been constantly on it. Camphor liniment in cloths to be applied to unmortified part of thigh. Morphia every few hours, so administered as to keep him tranquil.

20th. Mortification still advancing up the thigh; it is now only a few inches, below the groin, and the latter is tumid and inflamed. The dressing of the wound is very painful; this evening it gaps open an inch or more, and having ceased to suppurate, its bottom is covered with a thick coat of white coagulating lymph.

The patient was very restless during the forenoon; about mid-day, he was informed that his medical attendants were in despair of his recovery; his wanderings of mind ceased; he sent for a friend to make some arrangements, and then continued tranquil with a disposition to sleep for the remainder of the day. His pulse on two examinations, one at 5 o'clock P. M. and another at 9½, intermitted about every seventeenth stroke.

21st. All the symptoms aggravated since yesterday; some little oozing of blood from wound. On being further informed of the precariousness of his situation, he observed that if the artery gave way he did not wish the blood arrested, as the protracting of his life for a day or two more in the state he was in, could be of no use.

23d. Mortification still progressing upwards; morphia continued 0.5 gr. every three hours; other symptoms as usual; scrotum much enlarged; flabby; œdematous; of a black colour, with cuticle disposed to separate.

25th. A point of mortification which showed itself two days ago by a bloody vesication below the anterior superior spinous process of ilium has extended itself; scrotum to our surprise is now small; corrugated; firm; and cuticle sticking close, a new one probably having been formed in place of detached one. The mortified limb is perfectly black with the exception of a few inches about the knee, and emphysematous; maggots have been developed in great numbers under separated cuticle of thigh, leg, and foot; by means of spirits of turpentine we killed nearly all of them; fœtor of limb much corrected by the fomentations of chloride of lime.

26th. General condition of patient not worse than at preceding periods, mind clear and composed; hiccough. Thigh cut off through mortified portion to diminish fœtor, and to prevent the sulphuretted hydrogen gas from being driven between muscles, up to the trunk of body, which we suppose may already have accelerated the progress of the mortification upwards; operation about six inches below hip joint. Black drop (Quaker) 10 gtt. at night, to be repeated as required.

27th. Mortification progressed a few lines upwards; skin above it rather more healthy in its appearance; hiccough; pulse still intermittent at times. Bowels opened at night with a solution of sulph. of magnesia in soda water.

28th. Mortification seems to be arrested; skin contiguous looks like an effort to detach mortified part; cut off some large pieces of muscle and skin that were entirely dead; original wound suppurating well; hickup still continues. Prescribed for latter, Mist. Moschæ, ℥ss, every hour. Put a poultice of Indian meal and porter on stump.

Hiccough still continues at 1 P. M, but patient collected and cheerful. He was permitted to use English Brown Stout and Champagne with water for a common drink.

Finding in the evening that the hiccough continued, I abandoned the musk mixture, and gave 8 gr. pulv. Dover, every two hours.*

29th. The pulv. Dov. had the effect of allaying the hiccough, and procuring a night of tranquillity. On dressing the stump, found the original incision suppurating finely, and looking well, notwithstanding that sphacelus had reached its inferior end. The sphacelated muscles are in a state of putrescence, soft and shortened; found a sphacelated sinus as broad as the four fingers under the gluteal fascia, above the trochanter major; it seemed to have been formed for some time, and probably preceded the sphacelation of the skin in an angle above it. Muscles of the crus of the pubes and ischium sphacelated to within a little distance of their origin. Dressed stump at 9 o'clock with cataplasm of Indian corn meal and Durand's solut. chl. sod.

Dover's powder continued; hiccough returned this afternoon; gave in addition six drops of black drop. Pulse very intermittent, and irregularly so all day; prostration of strength increased.

When I saw him at 8 P. M., the pulse had increased its irregularity of stroke; the hiccough continued, but not so bad. He drank a tumbler of cold milk with great satisfaction; had his stump dressed with strips of lint imbued with the sol. of chl. sod. Discontinued Dover's powder; ordered two drops of Quaker drop at 10 P. M.. and ten at 3 A. M.. Cold milk to be given occasionally during night.

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* At this period, the principal duty of attendance devolved upon myself, owing to Dr. Harris's health being so deranged that it was absolutely necessary for him to retire from the city for the benefit of the country air, and which he did with great reluctance viewing the critical situation of our patient.

30th. On calling at half after 6 A. M., found him in a very tranquil sleep; and learned that he had spent the night in moderate comfort. 9 A. M. Countenance clear; tongue nearly clean; mind vivid. Mortification seems definitively arrested, and the work of elimination going on, by a seam between dead skin and living which is open here and there for two or more inches, and suppurating. Some of the muscular shreds semifluid from putrefaction; removed them. Pus begins to be secreted copiously from the inlets or fissures in stump, between muscles and skin, especially under a loose flap.

Directed an exclusive milk diet; dressed stump again with bits of lint impregnated with sol. of chl. sod. 9 P. M. Strength good; day passed in alternate rest and agitation; hiccough still continues; has taken some doses of Quaker drop. Process of separation of dead from living parts progressing handsomely, especially as regards skin, which is now almost ready to be detached. Renewed his bed arrangements; repeated same dressing on stump with basilicon on skin and place of original operation. The gluteus medius muscle under the flap of skin, feels as if it was converted into a soft putrid pulp. Directed a renewal of opiates during night; and tea-spoonful of Hoffman's anodyne to relieve a spasm in the glottis occurring during hiccough.

31st. Found him at half after 6 A. M. in a deep sleep, with warm perspiration, and some singultus. At 9, dressed stump; seams between living and dead skin more open and loose; removed several large pieces of dead skin; and some bits of muscle; suppuration free and healthy from exposed living surfaces. Dressing, chlor. of sod. with lint. Day spent in comparative ease, till towards the close of the afternoon, when his stomach became sickened by a piece of bread. A good discharge from his bowels, owing to a solution of ℥j. sulph. Magnes. in Soda water given about 10 A. M. Dressed stump this evening at 8 o'clock, with Ung. Basilicon after pouring some sol. chl. sod. over it; and gave a dose of solut. of sulph. morph. gtt. xl, to be repeated gtt. xxx, at 1 A. M. It is now a subject of habitual remark to us, that the singultus stops whenever he is in pain from dressing the wound and stump.

August 1st. Has had a good night, with the exception of severe singultus occasionally. Dressed stump at 9 A. M, and found suppuration proceeding finely, as well as the loosening of the sphacelated skin and muscles; small portions of both cut away. Dressed with basilicon on lint; covered this dressing with a cloth imbued with sol. chl. sod.

Day spent in considerable exhilaration of spirits; cheerful lively conversation with friends; breakfast of mutton chop; dinner of beef steak.

Dressing as in morning renewed at 8 o'clock in the evening; gtt. xl solut. sulph. morph.; and gtt. xxx, to be taken at 1 A. M.

2d. An evident improvement in every respect. Cut away ligature from femoral artery, it being now the twenty-second day. Dressings and treatment as yesterday; spirits of patient excellent; hiccough almost gone. A whitish spherical tumour, an inch and a half in diameter, extremely sensible to the touch, but without pulsation, and which I had observed for a day or two, now attracted my attention particularly. I felt doubtful whether it was the aneurismal tumour; a cyst containing matter; or a tumour formed on the course of the anterior crural nerve. Having it on my mind, I expressed to Dr. Goddard, in consultation, since the departure of Dr. Harris, my uneasiness on the subject. This occurred at our visit and dressing at 8 P. M., and we parted about 9.

3d. Bowels spontaneously evacutated this morning about 6 o'clock. At 9, found that our patient had passed a good night. Determined to explore the character of the tumour which had obtained our attention, I began to dissect from it the mass of mortified muscle at its inner side, and then made a puncture into it; a flow of arterial blood immediately followed. I passed my finger into the orifice to check the hæmorrhage, and to obtain time for reflecting on its cause and the mode of proceeding. My first idea was, that I had acted prematurely in taking away yesterday the ligature from the femoral artery; but from this scruple, I was relieved by ascertaining that pressure on the femoral artery did not stop the bleeding; consequently, there must be a collateral supply of blood. I then determined to explore the whole circumference of the tumour, and to surround it in every direction with ligatures; with that view, I cut through an isthmus of living matter, in front of the femoral vessels, consisting principally of fascia, and some adhering cellular substance. On doing which, it became clear that the tumour was aneurismal, and that the disease had returned. I also perceived a very thin cul de sac, hemispherical, and half an inch in diameter, connected with the aneurismal tumour and pulsating strongly. In the manipulations of the sac this tumour burst and bled freely. I then proceeded in tying in masses every thing connected with the sac, in consequence of my finding the structure so altered, and so many vascular connections of the sac, that the ordinary arterial arrangement was much modified, if not radically changed. I put ligatures above in the line of the femoral artery, another in the direction of the os femoris; another in that of the pubes, and another between the most posterior face of the tumour, and the trochanter minor. The latter being done according to the suggestion of Dr. Goddard, who, during this time held the aneurism in a state of compression which arrested the bleeding, and saved us from the distress of seeing our patient die on the spot.

These events were attended with a flow of blood from the original seat of the operation, and I then supposed that the artery had ruptured at the spot where its ligature had been, but when all the new ligatures had got their position, this bleeding ceased, so that the probability is, it came from a retrograde instead of a downward current of blood, and which was proved in the dissection after death. The obscurity of the vascular connections of the aneurism, and of its internal arrangements compels me rather to conjecture than to state it as a point ascertained, but I am of opinion that the place punctured by me first was the enlarged femoral vein; and the protuberance which ruptured was the aneurismal sac. The principal part of the bleeding and the most rapid gush of blood was certainly from the latter; the orifice of communication between the two vessels, was, therefore, still open as it had been.*

Returning at half after 1 P. M., found the dressings beginning to soak with fresh blood, of which the patient had lost about a gill or more. I opened the stump, and secured some small arteries near the capsular ligament of the hip joint, which had been cut in the previous affair. A faintness of a most deadly and unpromising kind now came over him; his pulse almost unaccountably rapid and feeble; his respiration in long heaving efforts; complexion cadaverous: and a cold copious exhalation from every part of him. (The day was very warm, as the thermometer stood in the shade at 82.)

He continued, with slight variations of symptoms, improving and then receding, and hanging, as it were, on the skirts of life, during the remainder of this day. A table-spoonful of volatile julep was administered every twenty or thirty minutes, with an allowance also of mint julep. At 10 P. M., some augmentation of pulse; the volatile julep was then for the rest of the night given every hour, or else some rich beef broth; and as he now became very drowsy, he was not permitted to sleep on any account more than an hour at a time, but to be roused up to take his medicine or nourishment.

4th. He feels sensibly his weakness this morning, and his spirits are more broken than before, with his mind, however, perfectly tranquil and collected. No hæmorrhage; stump easy. On dressing it at 9 A. M., the suppuration was observed to have been resumed at the points where it previously existed.

The day was spent under the use of nourishing diet; he begins, however, to be troubled with pain in the right side of the throat, about the origin of the œsophagus, and is unwilling to swallow; we have, therefore, to urge him. This pain is attended with a collection in the pharynx of an inspissated mucus, which is raised with difficulty. I prescribed for this affection, frictions of volatile liniment.

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* Having apprehended some such trying scene as the present, and feeling a distrust in the facility of applying the usual fixed needles for hæmorrhage, I had prepared, some days beforehand, and kept ready in the room a hæmostatic needle of a design somewhat novel. This needle, with the prompt and expert aid rendered to me by Dr. Goddard, I found invaluable in proceeding rapidly and systematically to secure so many routes of arteries. The instrument has since become the subject of a communication in the Medical Examiner of 29th August, 1840.

[A figure and description of this instrument will be found in the American Intelligence of the present number of this Journal.—ED.]

In the evening, had a well-marked fever, with pulse of some force. Took gtt. xxx sol. morph. at 10. No hemorrhage to this time; did not dress stump; fœtor considerable.

5th. Spent last night tranquilly; had a slight chill about 7 A. M., which ended in a fever with copious perspiration which was over about 1 o'clock; at this time, we changed his shirt and bedding, at which he expressed great relief.

Dressed stump at 9 A. M.; sphacelation of parts included in ligatures of 3d inst., very distinct, except skin in front; old sphacelated muscles, being the adductors, black and pulpy; flap contracted and thickened; suppuration healthy and abundant; no hemorrhage. At 1 P. M., began to administer ℥ij. of infus. of serpentar. every two hours, which was discontinued in the evening. Morph. solut. gtt. xl, at night.

6th. The patient is somewhat recruited; ordered an infusion of Cort. Peruv. with elix. vitriol; ℥ij of former, to gtt. v of latter every two hours. Pain in the throat augmented, and an uneasiness extending down to the epigastric region. I prescribed in the evening, for the relief of the viscid expectoration as follows: ℞. Gum Arab. ʒj; Aq. fluv. ℔j; Elix. paregor. ℥ss: Acid. lim. ℥iss; Sacch. q. s. M. Dose of two ounces to be repeated every two hours during the night; gtt. xl, sol. morph. to be put into the first dose. At the dressing in the morning, we perceived that the suppuration of the stump was going on.

7th. Dressed the stump at 9 A. M, and removed from it a considerable quantity of putrefied mollescent muscle. Parts included in ligatures of 3d inst. black, mollescent, putrefied, and furnishing no hemorrhage.

The removal of the sphacelated muscles brought into very distinct view the ischiatic nerve, which I observed at the time of the amputation to be alive and very hard, and that it bled at the end, though surrounded by mortified parts. It was now tumid, more than half an inch in diameter; inflamed, red, and manifested most intolerable pain on being touched. The exposed living parts suppurating. He suffered extreme pain on this dressing, and was enfeebled by it.

At 1 P. M, he was much oppressed with sleepiness; in a drenching perspiration; and his pulse very quick and enfeebled. As he lay in bed, he resembled a breathing corpse and was so debilitated, that some changes in his bed and personal attire which were then contemplated, were postponed till evening.

He began at 7 A. M., to take the infusion of bark with elix. vitriol, and continued it every two hours during the day till 10 at night. At 11 P. M., took xl, gtt. solut. morph:, and two doses of the infus. cinchon. and elix. vitriol during night. This day was spent in great debility, but in the evening, he revived somewhat.

Tuesday 8th. 28 days since the first operation. At 6 A. M., I found him much debilitated from a drenching perspiration; his voice feeble and plaintive. He complains much of his mouth which is becoming aphthous;

ordered a wash of sage for it; and gave him a parboiled egg, to be repeated every two or three hours. Discontinued infus. of bark and elix. of vitriol, under an apprehension that the quantity of fluid favoured his perspiration. Determined also to discontinue opiates at night.

At 9 o'clock, dressed stump; the granulating parts looked well, and had discharged a good pus; removed some of the sphacelated pulp on adductor muscles; the aneurismal tumour is black, dead and almost ready to drop off. The ends of three nerves are now exposed for an inch or two and are in a state of inflammation; the sciatic; the obturator; and the anterior crural, all of which give excessive pain on the lightest touch. Put basilicon along the edges of the stump, and covered its face with dry lint; fixed some sticking plaster strips to bring up flap, and Dr. Goddard contrived a swing of the same for the sciatic nerve. Afterwards covered the stump with a thickness of unspread patent lint; and left off an oil cloth which had been heretofore used to cover it.

Indications of a bad ulcer on point of coccyx, and on the posterior superior spinous process of right side; changed his bed-clothes. Observed that the air bed of gum elastic cloth which he had used heretofore, had collected a large quantity of moisture, on all the surface applied to the back of his thorax, from the perspiration. Sudamina on abdomen.

Extremely ill in the evening; pain in right shoulder in which he had received a pistol ball when he was 19 years of age; pain in hips; fever and excessive perspiration; discharge of stump diminished. Raised him up and put three folded blankets between him and his air bed, for the purpose of making it softer, and preventing the accumulation of moisture under him. He took during the day three eggs and some boiled custard.

9th. 6 A. M. In profuse perspiration; difficulty in swallowing still continues; slight delirium and incoherence. Evident declension since yesterday, but not so rapid as I expected. At 9 A. M. on visiting, found a small puddle, one ounce, of coagulated blood between his buttocks. This produced strong apprehensions that some vessel of importance had given way; and before any thing more was done, I got my instruments ready for a serious operation. On raising up integuments, I found two small strings of coagulated blood, which I traced to their source in the base of a process of integuments, where the ligature of the 3d inst. had been fixed on it, and on the trunks of the femoral vessels leading to the aneurismal sac. The latter was now nearly detached, adhering only by two or three vascular filaments; on cutting through the latter, the sac fell off, and a little dry lint stopped what remained of the hemorrhage.

The slight loss of blood seemed to have relieved his delirium; stump suppurates freely, and looks well. It is now a fair granulating surface, with the exception of the origins of adductor muscles in part, and of the hamstring. The sphacelus has swept away the muscles of the thigh; clear up to the obturator externus, the small rotator muscles on the back of the buttock are visible, and also in a granulating condition. The insertion of the gluteus magnus is left.

He spent this day in such extreme illness with delirium, that it was not thought proper to change his shirt or disturb him in any way, except by administering such articles as he called for.

In the evening, the stump was found to have suppurated still more freely; probably, in consequence of its having been covered more closely with basilicon than it had been the day before.

10th. 6 A. M. Mind more collected; voice better; swallowing better; pulse full, strong, frequent; skin warm and contracted. Has not lost in strength for twenty-four hours. At 9 A. M., dressed stump, and found that it had suppurated well since last evening; mortified muscles still detaching; cut off some ounces of them. Inferior end of femoral vein seems to be open, which imparted a suspicion, that the bleeding of yesterday had come from it, at least in part. Dressing as usual, painful. At 1 P. M., raised him up changed his bed-clothing and his shirt, all of which he bore well; bed ulcers not worse. He spent this day on the whole, in a better state than the preceding.

11th. Has had rather a bad night; debility increased; mind unsettled; respiration hurried and laboured, larynx moving up and down with each act of it; skin moist, cold and flabby with cold wrists; moribund rattle. In consequence of being raised in bed last night, about one o'clock a hemorrhage had occurred, apparently from the femoral vein. Dr. Goddard was sent for, but it had stopped on his arrival; its amount was an ounce or two. His stump was also flabby; the secretion of pus had diminished, and was rather greenish. The sciatic nerve, from being tumid, hard, and with a feeling of erection in it somewhat like a child's penis, was collapsed and flexible. There was also a cadaverous smell in his breath. In short, every thing indicated that a life, protracted under such difficult circumstances, is about yielding. On dressing him at 9 A. M., I introduced a dossil of lint imbued with a strong solution of sulphate of copper into the femoral vein and also into the femoral artery, and sustained them in position by a roll of patent lint, at their base.

He died on the morning of the 12th, at half after 3, without a struggle.

12th. Necropsy at 12 A. M. His frame had become extremely attenuated and emaciated. The viscera of the abdomen were perfectly sound. *Stump.*—All the muscles whose insertion or attachment was below the trochanter minor had sloughed or sphacelated to their origins, excepting the gluteus magnus. The cellular substance surrounding the sciatic nerve was sphacelated to within a few linesof the sciatic notch. This nerve was still more flabby than at the dressing of yesterday morning at 9 o'clock, and was covered with a thick coat of coagulating lymph.

The os femoris was in a state of necrosis up to the epiphysis formed by its head, and by the trochanter major. On being opened with a saw, a darkish serpentine line indicated the demarcation of the previously dead part; and the cells of the latter appeared to have undergone a limited suppuration. The bone being struck on its head, before it was sawed open, emitted a hollow sound. Some pus was found in the hip joint, the synovial membrane of which had a dark appearance. The anterior half of the cartilage of the os femoris was thinned by absorption apparently from the surface, which may have been done by the contiguous synovial membrane which covers the capsular ligament, as the cartilage from the fixed position of the limb had been, probably, since the original accident in contact with the synovial membrane; part of the cartilage in this region of the bone was entirely absorbed. The capsular ligament was sound.

The femoral artery just above the place of the original ligature was converted by its influence into a cul de sac; the bottom of which was firm, adherent, and about a line in thickness, and had a conical coagulum of bloody fibrine adhering firmly to it, about three lines long—with the apex upwards, and terminating at the orifice of a small artery, perhaps one of the external pudics. To this apex was appended a filament of the same fibrine, an inch or more long, running upwards in the canal of the artery.

Exactly where the ligature had been placed, the artery had been cut through by it, and the canal of the artery put on the appearance of a dilatation, and was continuous also with the original wound now reduced to the state of a small conical cavity. The artery was pervious from that to its inferior end. Trunk of artery thickened.

The femoral vein was open below; a probe passed unobstructedly from its inferior orifice upwards *sine limine* into the iliac. It was enclosed, as well as the iliac and the lower part of the ascending cava in an additional coat of tenacious fibrinous matter, which made them adhere firmly all along their course to the corresponding arteries and subjacent fascia iliaca. The external coat of the femoral and iliac vein was thickened and hard; and the internal coat exhibited the remains of strong inflammation, by its irregular slate-coloured surface, covered with a deposit of coagulating lymph. This appearance and deposit went up the ascending cava on its left side for two or three inches and there terminated in an angular manner. On the cava of this region were found some two or three plates, oval, half an inch in diameter, looking very much like the glands of Peyer in the intestines. Some lymphatic glands in a state of suppuration containing a small quantity of fetid slate-coloured pus existed in the course of the iliac vessels. No suppuration existed around the rectum and bladder.

Thus finished this most important case of aneurism, and the reflections arising from it are:—

1. Did not the mortification ensue from its being easier, on the ligature being applied to the femoral artery, for the arterial blood to flow by the anastomoses of the obturator, gluteal or ischiatic arteries into the circumflex—thence into the sac, and return thence by the femoral vein, than flow to the

foot and parts below the groin? The freedom of this anastomotic communication with the sac was proved, by the aneurism continuing, though the main current of blood through the femoral artery was cut off, as proved by the necropsy. Would it not, therefore, be always proper to secure in every direction the arterial trunks, primary and collateral, communicating with a varicose aneurism, so as to force the blood downwards to the limb below, and thus prevent the possibility of its returning to the vein without a complete circulation?

2. Did not much of the extent of this mortification, at least in the thigh, depend upon the deleterious gas generated by it below, forcing itself upwards by emphysema under the skin, and between the interstices of the muscles? In those cases, therefore, is it not better to open freely the integuments and even the fascia to prevent such an accident, or to perform amputation?

3. Without the hemorrhage of the 3d inst., and the severe operation attending it, would it have been possible to save the patient, inasmuch as he was so well on the 2d?

4. To what are we to attribute the necrosis, or premature death of the os femoris—to the disease or to the operation which shut off the supply of blood to the part?

5. What produced the inflammation of the hip joint, and what was its date?

6. What was the date of the inflammation of the vein;—did it correspond with the progress of the mortification, or was the ligature of the 3d inst. its cause?

7. What influence had this venous inflammation, and also that of the three nerves, the ischiatic, the obturator, and the anterior crural on the constitutional symptoms and the final failure to cure?

8. The sensibility to pressure from which the patient suffered so much at the first consultation, that he felt the pain twenty-four hours afterwards, what was its source? Did it arise from the then existing inflammation of the femoral and iliac veins? The thickening of these veins, and the additional perfectly organised coat thrown over, indicate an inflammation anterior to Dr. Harris's operation, and probably from the time of the wound. This inflammation suffered an exasperation immediately following the mortification; a second one afterwards; and a third also from the operation of the 3d of August, judging from the recent appearance of the coagulating lymph, on the interior of the vein.

Would it not, therefore, be proper in all those cases of painful sensibility in the aneurismal tumour, and the vein leading from it, to endeavour to diminish the inflammation by leeches, poultices, and so on, and to cure it if possible, before an operation?

9. Ought we not, before obliterating a main arterial trunk, to spend, if it be at our option, some time in dilating the collateral branches, by pressure on the trunk itself, interruptedly applied? This salutary practice appears to have fallen into unmerited disuse.

Case II. *Aneurism from Venesection.*—Miss B., of Georgia, ætat. 8 years, being exceedingly ill in March, 1837, was bled by a physician in the left arm, at its bend. Nothing unusual at the time was perceived, but in a week afterwards, she felt a small pulsating tumour, the size of a pea: it continued to increase, and she was brought by her parents to Philadelphia, and placed under the charge of Dr. J. Randolph, who called me into consultation.

At this time, September 27th, 1837, the tumour is about the size of a large filbert; has a strong pulsating motion which may be felt vertically; laterally; and also when the arm is bent, and the tumour pulled up from it. Pressure diminishes its size to one half; it then remains hard and unyielding. Pressure on the brachial artery arrests its pulsation. There is no thrill or purring noise as in varicose aneurism; the vein which was opened at the point of bleeding, is not visible.

On the 29th of September, an operation was performed by Dr. Randolph, the course of the blood being regulated by a tourniquet on the arm. The skin was slit up for two or three inches in front of the tumour, which exposed the tumour beneath the fascia of the arm and the aponeurosis of the biceps; these being dissected through, the tumour was laid bare by continuing the dissection over its surface, so as to exhibit the brachial artery and vein both above and below it. A ligature common to the two vessels was then carried under them, above the aneurismal tumour; it, upon trial, was found to control the pulsations of the tumour; it was then fixed, and the aneurismal tumour cut open. Upon slacking the tourniquet, blood issued from the tumour freely; a ligature was then fixed upon the artery and vein below the tumour; upon loosening the tourniquet again, blood flowed from the tumour, but not so freely. The tumour was now detached still more from its bed; a knife-handle passed under its middle, and along it, one ligature conveyed above, and another below; these ligatures were directed in such a way as to insulate the tumour completely, by being tied above it and below it; the one below being drawn first was found to restrain the bleeding completely, but to make every thing secure, and to put the disease beyond any possibility of recurrence, the upper ligature was also fixed.

The vein which probably was the one that had been bled was seen in front of the sac adhering closely to it; it appeared to be almost obliterated below, and was very small above. There was nothing like a varicose state perceptible in it; so that if it had really been punctured, the wound had healed.

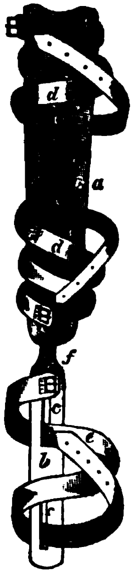
The sides of the tumour were very thick, and indurated, which will account for its not being entirely flattened or collapsed by pressure before the operation, and there was no coagulated blood. Whether it was formed by a dilatation of the artery, or by a cyst on its side, was not ascertained, from the obscurity of parts during the operation.

The tumour sloughed off kindly in this case, and the wound healed by the 20th of October, the recovery being perfect.

Art. V.—*Report of Cases of Deformed Feet, treated by mechanical means alone, with a description of the Apparatus employed.* By Heber Chase, M. D., of Philadelphia.

In deformities of the feet, whether there exist an inversion or eversion, the same principles will apply to their treatment. In these cases, whether the foot has advanced to the first, second or third degree of *varus*, as described by authors, the first step towards a restoration, consists in bringing the distorted foot into the same axis with the leg. This we have accomplished by means of an instrument represented in Fig. I. It consists of two parts, a brass splint, (*a*), and a steel plate, (*b*), connected by means of a malleable iron neck, (*f*), which can be bent, by considerable force, but will not yield to the power necessary to act upon the foot. The utility of this arrangement will be readily understood by the operator, because, in order to act to the greatest mechanical advantage upon the foot, the plate is required to be placed at different angles with the splint in different stages of the progress of restoration. The steel plate should be one inch in width for an adult, two lines in thickness, and extend to a distance equal to the interval between the ankle-joint and the ends of the toes.

Fig. I.



In cases of inversion of the foot, the brass splint is applied to the outside of the leg. It should embrace one-third of the circumference of the limb, and should extend from just below the knee to the upper part of the external malleolus. It is secured to the limb by the straps (*d*, *d*).

By means of this apparatus, the foot is brought outward towards the steel plate as far as possible, without occasioning much pain, and is then confined by the strap(*e*), which is thrown around the foot and passed through the fenestræ (*c*, *c*).

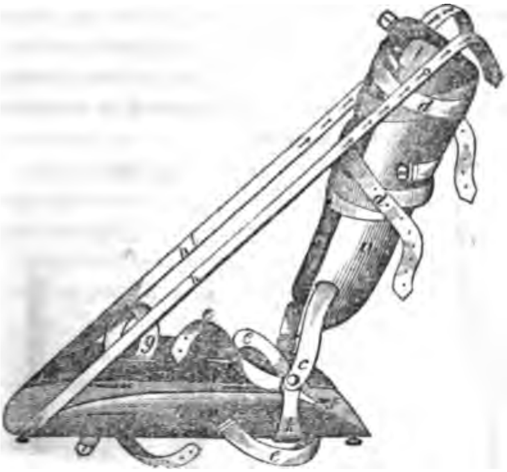
In the progress of the restoration of the foot, the strap surrounding it requires to be drawn more firmly from time to time, as will be mentioned in the report of cases.

In *eversion* of the foot, the brass splint is to be adjusted to the *inner side of the leg*, when the same principles will apply as in *inversion*.

The use of this instrument must be continued until the foot is brought into the same axis with the leg, and until the disposition to a return of the deformity has ceased.

The second indication to be fulfilled is to effect the proper flexion of the foot. This we have accomplished by means of the instrument represented in Fig. II.

Fig. II.



It consists of a plate of brass (*a*) moulded to fit accurately to the back and sides of the leg, and extending from immediately below the knee to just above the malleolus. A second piece (*b*) formed to act as a sandal or shoe, equal in length, and a little wider than the foot. These are attached by a hinge, (*c*,*k*) so as to admit of flexion and extension. The leg is secured in the brass splint, by straps, (*d d*,). The foot is secured to the shoe by a strap, (*e*) wihch is thrown around the instep, then passes through a fenestra behind the heel, and the extremities being reverted, are returned over the instep, where they are secured by a buckle. There is also a strap, (*g*) intended to pass around the foot near the toes, in order to draw it outward, when flexion is being made. The fenestræ at the right and left of *b*, are for the passage of straps, when the instrument is employed in cases of eversion of the foot. *h*, *h* are two straps for approximating the extremities of the instrument. *l*, a knob for securing the straps.

By examining the instrument itself, it will be seen, that the appendage marked *k*, does not clasp the shoe firmly, but stands out from it to the distance of half an inch on each side. This appendage passes beneath the shoe, and is attached by its centre, at a spot just anterior to the fenestra, (*f*,) by a universal joint with a limited motion. By means of this arrangement, when it becomes desirable to produce some degree of abduction of the foot in cases of inversion, this object may be accomplished by drawing the strap *h i*, more firmly than its fellow.

The leg is to be placed in the brass splint *a*, the foot in the shoe *b*, the leg is secured by the straps *d d*, the heel kept down by the strap *e*, and if desirable, the loop of the strap *g*, thrown around the foot in cases of varus, to produce partial abduction.

During the progress of restoration, the straps *h i*, and *h*, are to be drawn, from day to day, more tense, as the foot yields to the action of the instrument.

In deformities of the feet varying from those above mentioned, the instrument employed, will be described in connection with the cases.

CASE I. ***Congenital Calcanean Club-foot of the left side; Restoration of the foot to a natural position by mechanical means, in twenty days.***—On the thirteenth of July, 1840, J. B. H. Esq., of this city, requested me to see his little son, a healthy robust child four weeks old, and whom I found to have a deformity of the left foot—(calcanean club foot of the worst variety.) The deformity is congenital—no cause can be assigned for it—Mrs. H. is the mother of several children, all of whom are perfect in their limbs, nor can there be traced a deformity either in the paternal or maternal branches of the family, both of which are numerous.

Fig. III.

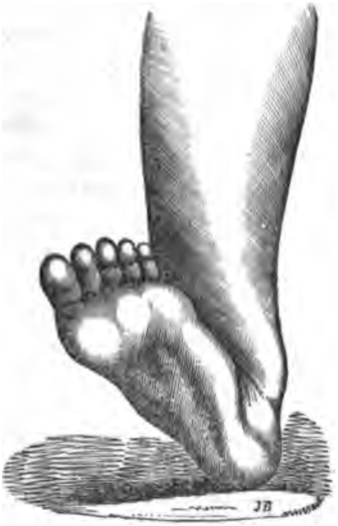
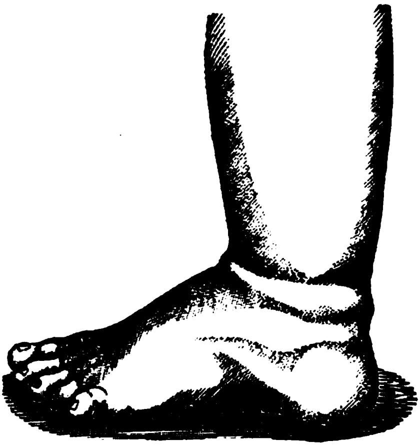


Fig. IV.



The dorsum of the foot was drawn upward, in such a manner as to rest firmly upon the lower part of the front of the leg, whilst an obliquity caused the small toe to rest on a line with the inner side of the leg. See Fig. III.

From the tender age of the child, it was not to be expected that much rigidity of the misplaced parts could have taken place as yet; therefore, the foot could be brought nearly to its true position, by moderate force applied to it by the hand, whilst the leg and ankle were supported; but returned immediately to its distorted position when these efforts ceased.

There was some want of development in the foot and leg generally, when compared with its fellow; and at the lower part of the leg, where the dorsum of the foot rested upon it, the subcutaneous fat and cellular tissue were to a considerable degree wanting, and the leg, when the foot was elevated, presented a perfect cast of the dorsum of the foot.

For the relief of this deformity, I applied to the outer side of the leg, for the purpose of bringing the foot not only downward, but inward, an instrument extending from the knee to the bottom of the foot similar to that represented in Fig. I, with the plate *c*, bent at a right angle with the splint at *f*, and secured by the straps *b b*. The foot was then brought down to half the distance required for restoration, and secured by a roller passing round it and through the fenestræ.

For a few days, I saw this patient daily, afterwards, less frequently. At each visit I adjusted the instrument when necessary, bringing the foot nearer to the required degree of extension and eversion until the second of August, when it was brought to the correct position as seen in Fig. IV, and remained so when the instrument was removed.

Aug. 15*th*. The patient has apparently suffered very little from the dressings. Not even an abrasion of the skin has followed the use of the instrument, and the child enjoys all the proper motions of the foot with perfect freedom.

October 16*th*, 1840. This little patient has been able, for several days past, to stand even upon his feet.

Case II. *Congenital Inversion of the Right Foot, of the worst variety —(varus of the third degree)—Treated with Complicated Machinery for several months, with little or no effect.—Restored in thirty-one days by a simple apparatus.*—Early in the autumn of 1839, my attention was called to Samuel M'Kee Chambers, ætat. 2, who had a complete inversion of the right foot. He was walking upon the outer edge of the foot, which had formed for itself a perfect cushion, upon which it rested—the sole turning backward whilst the toes pointed directly toward he opposite ankle. See Fig. V. In addition to this inversion of the foot, there was a defect in the knee-joint, permitting the leg to revolve upon the thigh, to the extent of one-fourth of a circle, and by the application of some force, the toes could be made to point directly backward. This seemed to be owing to a change in the cartilages of the joint, and the relaxation of the capsular and other ligaments. The leg itself was somewhat smaller than its fellow, but the thigh appeared of its natural dimension.

As soon as an apparatus could be prepared, I adjusted it to the foot of the child, and kept it in constant use, until May, 1840, when finding that very little progress had been made towards a permanent restoration of the foot, and that the patient was very unwilling to wear the machine, the instrument was laid aside. The leg, however, had commenced increasing in size—the knee had acquired some strength, and the limb was brought partially to its true position.

July 1*st*, 1840. Having now succeeded in the restoration of other cases of deformed feet requiring more difficult treatment, I again returned to my patient.

On the 3d of July, I applied an instrument similar to the first of those described in the introduction to this paper, (Fig. I,) and by the 10th, the foot was brought on a line with the leg. On the 12th, the apparatus for flexion, (Fig. II,) was adjusted, which brought the foot to the position as seen in Fig. VI, in thirty-one days from the application of the first instrument.

Fig. V.

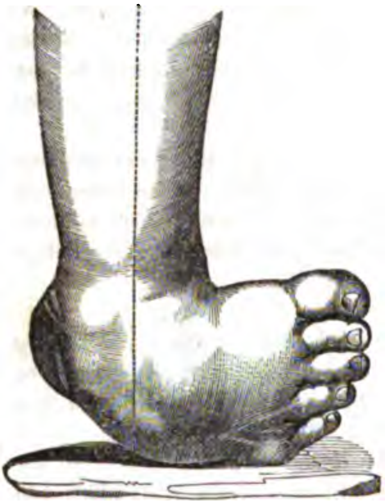
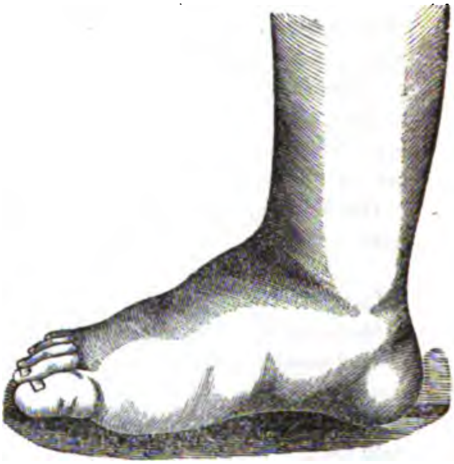


Fig. VI.



Until the 15th of July, the foot was daily brought nearer to the desired position. Very little pain was experienced, no soreness was occasioned by the pressure, and the patient who is one of the most robust, obstinate, and restless of children, ran at large in the streets at will, during the whole treatment. An ordinary shoe was applied on the 12th of August.

This is the only instance of any deformity known to have occurred in this family, either in the paternal or maternal branches, and no cause can be assigned for it by the parents.

Neither the tendons nor the fascia plantaris offer any resistance to the permanency of the foot as restored, nor do the tarsal or metatarsal bones exhibit that rigidity which so often limits motion, until a late period after the foot is brought to its natural shape.

The foot in walking, assumes its proper position, and the patient does not limp or hesitate at all in his movements. The arch of the instep is not defective, and all the varied motions, even including abduction are performed as perfectly as upon the opposite side.

October 18*th*, 1840. Two weeks ago I called to ascertain the situation of my patient's foot, and found him in the street, bare-footed, and was told he had been without his shoes for three weeks. No relapse from the original restoration had followed, and on the 15th inst. I exhibited this case to my class in a lecture on deformities.

Case III. *Deformity of the Left Foot, not Congenital, (Pes Equinus of the third degree, of six years' duration, combined with Partial Inversion of the front part of the foot,) Restored in twenty-one days.*— The subject of this case, J. Arbuckle, ætat. 11, was soon, after birth, observed, according to the statement of his parents, to have an unusual stiffness in the ankles, which, however, in his earlier years gave him no material inconvenience. He was remarkably healthy, very active, and walked at the usual age of childhood.

Occasionally, up to his fifth year, he complained of a pain in the hip for a short time. This difficulty never attracted the attention of his parents, particularly, until the foot was observed to turn gradually inward, and the heel to become elevated. Medical aid was then called. Bandages and splints were applied, but the deformity proving very obstinate, they were abandoned.

During the month of April of the present year, I saw the patient for the first time. There was, at this period, a partial inversion of the front part of the foot by rotation at the middle joint of the tarsus, while the distance from the toes to the heel was five and three-fourth inches; the direction of the foot being nearly perpendicular as seen in Fig. VII.

Fig. VII.

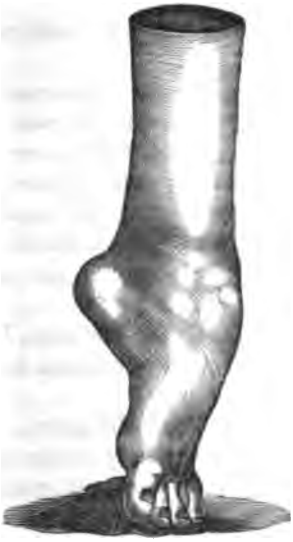
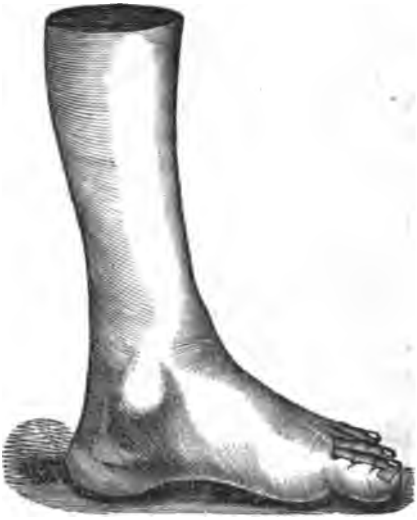


Fig. VIII.



There was a want of developement in the glutei muscles—the thigh, leg, and foot were also smaller than those of the opposite side, and the whole foot was remarkably rigid. The tendo Achillis was very stiff, and the bones of the tarsus were prominent, as is seen in Figure VII, and in short, the limb had undergone all the usual changes which take place, where it becomes necessary to sustain the weight of the body on the toes for a great length of time.

There was also a relaxation of the ligaments of the knee-joint, and while walking, the knee performed a peculiar rotatory motion outwards, which greatly retarded the patient's progress. These combined motions of the limb, together with the elevation of the foot, rendered it almost impossible for him to walk. He would frequently fall in the street, and after going a short distance, would suffer extreme pain in the foot and leg.

On the 11th of May, I applied to the outer side of the leg, the brass splint accurately moulded to the limb and the upper part of the external malleolus, extending from just below the knee to the last mentioned point.

After the application of this apparatus, the foot was drawn daily more and more toward the desired position, until, at the end of one week, it was brought into a direct line with the leg.

To fulfil the second indication—the flexion of the foot—the instrument represented in Fig. II was applied. The apparatus was secured to the leg and foot, and bound firmly at the instep by means of the strap, (*f.*) The point of the sandal and the upper extremity of the splint at the knee, approximated daily by the aid of the two lateral straps connecting those points, until the twenty-first day after the second instrument was applied, when the foot was restored to its proper position.

After the first few days the patient was able to begin to walk, which accelerated the flexion.

The pain produced by these instruments throughout the whole operation was by no means worth regarding. The process of restoration was slow but constant, and the changes brought about so gradual, that not even an unpleasant sensation was experienced beyond an hour, at any one time during the treatment. Not the slightest inconvenience was felt in any of the tendons, not even in the tendo Achillis during the treatment, but the pain was confined to the outer side of the foot during the abduction, and to the instep, during the flexion.

An abrasion of the skin took place and continued for a few days, being caused by frictions which were employed in aid of the treatment, but no such result was produced by the apparatus.

September 28th. There is still considerable rigidity in the instep. The motions of the foot are limited, and in walking, the rotatory motion of the knee is apparent, It is expected that support for the knee and continued exercise of the foot, will in time overcome these difficulties.

The condition of the foot, thirty days after the application of the first instrument, is shown in Fig. VIII.

This patient was seen, at different stages of the treatment by Professor George McClellan, Drs. E. W. Leach of Boston, Baldwin of Georgia, and Drs. R. Coates, Brewer, and West, of this city.

Case IV. *Greatly Distorted Foot, from exposure, which commenced in early life, restored in fifty-one days, by mechanical means alone.* —In the spring of 1840, my attention was called to Julia Dunmore, who was standing upon her crutches and on one foot, resting herself. The patient is now fourteen and a half years old, healthy, and as active as could possibly be expected, with the deformity under which she labors. She was a remarkably healthy and unusually active child—walked readily when nine months old—but at the age of a year and a half, she entirely lost the use of her limbs from exposure in a damp cellar, was placed under medical treatment, and recovered the motion of her extremities except that of her right foot, so far as to be able to walk in six months, with the aid of one crutch. She retained this power for some time, when it was observed that the hip was enlarging, and the leg growing shorter. A second crutch was then obtained, and the patient began to place the foot to the ground. The ankle was still however weak, but she continued to rest upon this as well as on the opposite leg, in walking. The ankle continued giving way, until the foot was brought to the position seen in Fig. IX, and thus she remained when she came under my care.

The whole limb was at that period much emaciated, measuring only five inches in circumference at the ankle, six and a half at the knee, and eight inches at the largest circumference of the thigh. The hip, and in fact the right side of the body, partook of the general emaciation.

She could stand, but she could not walk without her crutches, and she was so feeble in her limbs, that when she fell, she was compelled to crawl upon her knees, until she met with something by which she could raise herself up. The use of the limb produced great fatigue in it.

It would seem almost impossible that a greater deformity, or one more difficult of restoration, could exist, than is here shown. The foot was completely reversed. The patient rested the limb on the instep, which had been so long accustomed to pressure, that an enormous cushion (see Fig. IX, *a.*) had been formed to protect the foot from the ill-directed pressure.

In the treatment of this case, the same principles were to be applied as in the foregoing. The foot was first to be brought to the same axis with the leg, after which, flexion was to be made.

Accordingly, on Saturday, the 22d of May, 1840, I applied the brass splint to the outer side of the leg, as described in the preceding case. By the aid of the strap around the foot, I drew it daily nearer the line with the leg, until the tenth day, when it was made to assume the position seen in Fig. X.

On Monday, June 15th, I commenced flexion, and succeeded at the end of fifty-one days, in bringing the foot to the position seen in Fig. XI.

The entire restitution of the natural position of this foot, was accomplished perhaps with less difficulty than would be presumed by observing it in its distorted state. This was owing to the relaxation of the ligaments, and the ease with which the bones moved upon each other.

Fig. IX.

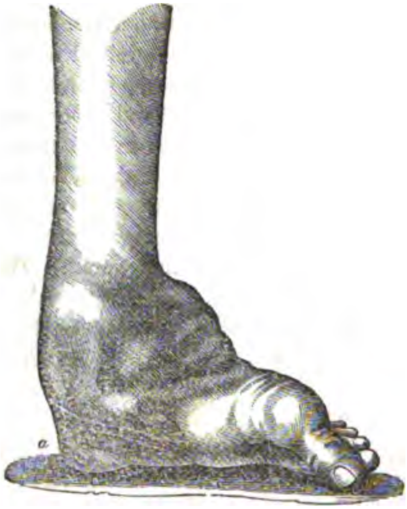


Fig. X.

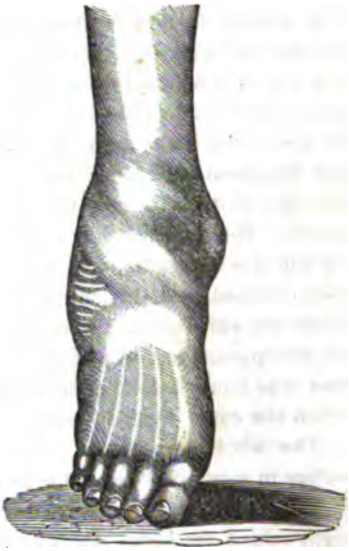
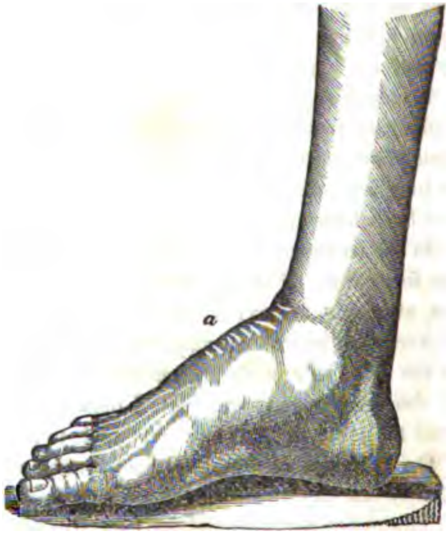


Fig. XI.



In the restoration of the foot, the pain experienced was comparatively little. In both rotation and flexion of the foot, this sensation was principally confined to the osseous structure.

With some effort this patient could bring her heel to the floor on the 10th of July, and on the 13th she began walking for the first time, and on the 30th the foot exhibited the appearance seen in Fig. XI.

That part of the foot on which it rested during the greatest degree of deformity, is now seen at *a*.

By reference to this figure it will be observed, that the leg is thrown slightly backward upon the foot, in consequence of a loss of proper action in the tarsus. This action the patient will again recover.

This patient has been seen by Drs. R. Coates, West, and Brewer; Drs. E. W. Leach of Boston, and Baldwin of Georgia.

Note.—*October 17th*, 1840. This patient has gained the use of her foot at the instep, and the leg is thrown forward to the proper position. She can walk several squares without much fatigue, and the general appearance of the foot is much improved from that seen in Fig. XI. She was examined by my class on the 15th inst.

Case V.—*Everted Deformed Foot; deformity commenced at two years of age, from paralysis; restored in ninety days by mechanical means.*—During the month of February 1840, Professors George and Samuel McClellan referred to my care Mr. J. B., aged 25 years, who was labouring under an everted deformed foot, as seen in Fig. XII, the history of which as given by the gentleman himself and his parents is as follows:

He was a healthy, fat child, and walked readily at nine months old. At two years of age he was suddenly seized with paralysis of the lower extremities, and spasm of the muscles of the back of the neck: his head was drawn far backward, and remained immovable for several weeks. He could not walk or sit without support, and both legs became entirely useless. This state of things was followed by several months of severe illness, when the left limb gradually recovered. At three and a half years of age he could climb up by a chair. At eight years old he could walk a short distance by the aid of two crutches, and continued in this situation for eight or ten years. He then walked four or five years with a crutch and a cane, and afterwards with a cane only.

Neither of his ankles had entirely recovered from paralysis when he began to bear his weight upon his feet; and as his general health improved, enabling him to take more exercise, his ankles, particularly the right one, gradually gave way, and assumed the appearance represented in the figure referred to.

The internal malleolus was very prominent, the bones of the instep rigid, the foot attenuated, and the leg and thigh much smaller than those of the opposite side. The left foot was also slightly everted. He had no control over his toes. In walking, the foot was thrown outward, resting upon the inner edge, and the internal malleolus came nearly to the ground. He suffered much pain in the ankle and leg in walking.

By considerable effort the foot could be brought inward nearly on a line with the leg, and in order to retain it permanently, a firm gaiter-boot was fitted to the foot and ankle. Two plates of steel were provided, three quarters of an inch wide, two lines in thickness, and attached at their upper extremities by means of a semicircular plate, designed to pass behind the leg near the knee. These were long enough to extend from the knee along each side of the leg to the bottom of the boot, beneath which they were bent and united by their extremities. Attached to the inner plate at the internal malleolus was a circular piece of steel plate three inches in diameter, about two lines in thickness at the circumference, and one-fourth of an inch at the centre. The whole being suitably padded was applied to the foot, and confined by straps passing round the leg.

Fig. XII.

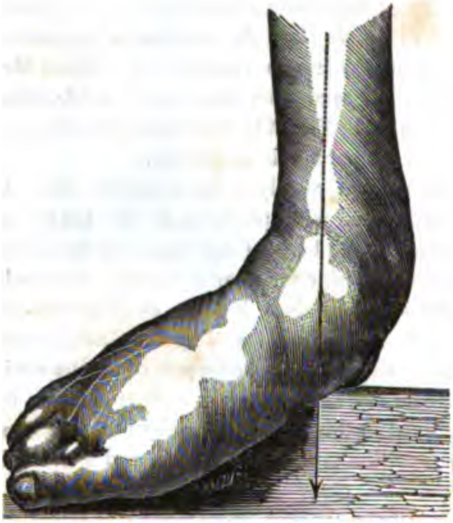
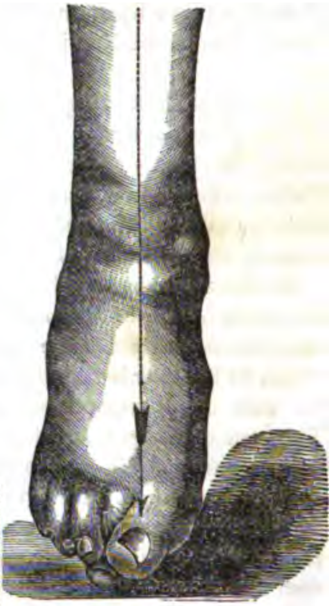


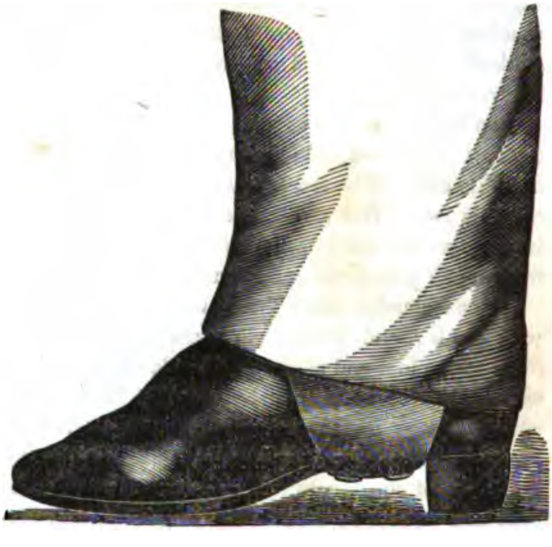
Fig. XIII.



This boot and its appendages were worn for ninety days, when the foot assumed the position seen in Fig. XIII.

The pressure at the internal malleolus by the circular steel plate was quite firm, and produced considerable pain in walking for the first few weeks. The rigidity of the ankle-bones limited the flexion of the foot for some time after it was brought to a line with the leg.

Fig. XIV.



At this period, Sept. 8th, the patient begins to enjoy the motions of the leg on the foot, and also to move his toes; the leg has increased one-fourth in size since the commencement of the treatment, and he is able to walk without any support, and without fatigue.

Drs. Bacon, Woodward, Smith, Morgan, Cogswell, and Ives of New England, are familiar with this case, and Professors Tully and Knight have examined the patient since his foot was restored—also the gentlemen who kindly referred him to my care.

I have several patients under treatment for the cure of false anchylosis of the knee-joint, with different degrees of flexion. Three cases have been perfectly restored. Some of these deformities are of many years' standing. The results we propose to relate in a future number of this Journal.

Art. VI.—*On Laceration of the Perinæum during Labour.* By William M. Fahnestock, M.D., of Bordentown, N. J.

There are but few accidents that befall the parturient woman, more untoward, than laceration of the perinæum, and there is scarcely one which has received less attention from writers on obstetrics. Mauriceau, Baudelocque, Hamilton, Ramsbotham, Gooch, Velpeau, Bard, Dewees, Ryan, Meigs and many other prominent authors in this department of medicine, give it, while treating on the natural process of labor, merely a passing notice, and that confined more to precautionary admonitions than to directing attention to remedial resources, when it has taken place; while Merriman, Denman, Burns and Davis, though they indicate a few more curative measures than the writers just named, despatch it with a page or two of hurried remarks.

This silence on so important a subject can only be ascribed to the general impression, that the accident is of very rare occurrence. It may be so in the practice of judicious accoucheurs—for Dr. Dewees informed the writer, a few years since, that he had to contend with but one case, happening to himself, in his extensive practice; which he attributes solely to the patient attention he always bestowed in supporting the perinæum during the expulsion of the child through the os externum;—yet, such is the nature of things that, in some cases, with the best management, laceration of the perinæum is unavoidable. That this accident does not more frequently take place is surprising. Dupuytren justly remarks:—"To my mind the wonder is, not that it should occur sometimes, but that it should happen so seldom. Whoever has witnessed first labours, in which the vulva has so much difficulty in dilating, and the perinæum so much exposed to become excessively stretched, must have felt some apprehension lest the head should burst through it. I am convinced that this passing of the head by the perinæum is not so rare as experience would seem to show, merely because the commissura vaginalis being ruptured, the accident receives the name of laceration of the fourchette;" and Roux says: "Partial laceration of the perinæum is an accident of very frequent occurrence in women who have borne children." It does occur frequently, we are satisfied, in general practice, from a very reprehensible neglect of the perinæum and the preposterous attempts of the midwife to dilate the vulva, with rude efforts, to assist a speedy expulsion of the child, either from impatience or an anxiety to deliver the woman from her suffering.

Our attention was directed to this subject by a case occurring in our own practice, eight years since, and the only one which has happened to ourselves in a practice of eighteen years—our experience in these cases being derived mostly from calls to women who had been attended by midwives; and which exemption we assign to the very earnest admonitions of our kind and distinguished friend Dr. Dewees, in setting out in business; which restrained every hasty and undue effort to effect delivery, and kept our attention ever watchful of the distension of the perinæal tumour; and particularly when it had arrived at its greatest stretch: at which period there is such a propensity to seize the head of the child with both hands, and present, to the anxious mother, the trophy of our dexterity.

The subject of the case just alluded to, was a very delicate lady, twenty-seven years of age, in her first labour, and who had fifteen months previously miscarried, at the fourth month of her pregnancy. She had been suffering under debility, from recent severe indisposition, accompanied by preternatural excitement of the general system, and attended with anasarca and constant disposition of the uterus to throw off its contents. On the 28th day of June, 1832, she was attacked with diarrhœa, which required bloodletting and other prompt remedies, as the violence of the pains threatened premature delivery. She was within three weeks of her full period, and on examination per vaginam, revealed a very relaxed os tincæ, with the mouth dilated to the size of a half dollar. The succeeding night the patient rested well, free from pain or uneasiness of any moment. But at nine o'clock next morning, (June 30th,) labour pains came on suddenly, with fearful rapidity, and before the bed could be prepared, the membranes protruded through the os externum, and the head forcibly distended the perinæum. In less than one hour from the commencement of the labour, the child was forced through the recto-vaginal septum, and in despite of all our efforts to obviate it by the most indefatigable attention to giving support to the perinæum and to relax the parts. Every measure failed to excite the usual sympathetic action or enlargement of the external parts; and what is still more singular, they continued without any tumefaction even after the accident.

Formerly we were disposed to consider the occurrence of this accident as the result of culpable negligence on the part of the attendant, but we are now satisfied that it is sometimes unavoidable. In this position we are sustained by the experience of M.M. Courtney, and Evrat, and Mad. Lachapelle; but more frequently it occurs from ignorance of the danger, and the want of proper attention on the part of the accoucheur; and we strongly suspect that it often happens when the attendant himself is not aware of it, from frequently finding traces of this accident in females in subsequent labours. On making inquiry of these patients, we have learned that it had not been communicated to the attendant; they having supposed, as many women, and particularly young women, in their first confinement, do, that it is a necessary consequence. Further, we have reason to believe, that when not extensive, it often occurs without being suspected by the patients themselves, and they do not complain of any thing but a little soreness, which is borne as inevitable. Dupuytren relates a case of a woman whose infant was delivered through an artificial aperture between the rectum and vagina—central rupture—without the mother ever suspecting the accident. This case was seen by MM. Baudelocque, Guersent, and Capuron; the latter of whom was sceptical, and maintained, that in every instance of central rupture, the child passes by the os externum; but the two former gentlemen and Dupuytren were satisfied of the delivery of the whole contents of the uterus—both child and placenta—through the rent, from the smallness and implasticity of the external organs. A case related by Denman may reconcile these conflicting opinions, in which he delivered the child, via naturalis, after the central rupture had taken place, by giving direction to the head with the palm of his hand through the vulva.

The extent of the injury varies greatly in different subjects, owing to the size of the child, the conformation of the bony and soft parts, the strength of the septum, the rigidity of the external organs, the force of the uterine contractions, &c., &c. It may sever the fourchette; and we are quite certain that this is frequently ruptured with all the greatest possible care; but as little or no inconvenience arises from this slight laceration, it does not require any particular attention. It may penetrate the septum, externally, between the vagina and rectum, half an inch, three quarters, an inch, or the whole extent to the sphincter of the anus; it may divide the sphincter ani, and continue up the rectum to the coccyx, exposing all the contents of the pelvis. The rupture of the sphincter ani presents an important and formidable feature in this injury, rendering it much more serious and difficult of cure. It may rupture the internal wall between the vagina and rectum without communicating externally; it may tear through this partition externally downward to the verge of the anus, leaving the sphincter ani entire; it may again be rent in the septum without extending to either the anus or os externum: and although this has been stoutly questioned, M. Moreau states that there are forty cases of this strange accident on record. The cases just alluded to above by Denman and Dupuytren are confirmative on this point.

In the case which occurred to ourselves, the accident was owing to a relaxed and greatly dilated os tincæ before labour came on; a pelvis capacious at the superior strait, admitting of an easy and rapid descent of the child; and having exceedingly small and unyielding external parts; which did not take on the sympathy of dilatation and had not the strength to resist the forcible contractions of a powerful uterus.

Another operating influence in the production of similar cases, we think, may be found in the too early departure of the chin from the breast of the child; which is pointed out by our most observant accoucheurs as a cause of preternatural labours, retarding very much the delivery of the child, and throwing much stress on the perinæum. We had a case quite recently, which presented all the apprehensions of such a frightful termination.

The patient was a young woman in her first labour, which was very rapid, the membranes having burst and the head at the inferior strait when we arrived at the bed side. On touching first, we found as we thought, the head about escaping, two inches in diameter of the vertex just emerging between the distended vulvæ; but upon a more careful examinatton, we discovered that the os externum was mounted up towards the symphysis pubis and that the forehead of the child was presenting through the dilated anus—dilated to the great extent just mentioned. Here was an alarming state of things, to one impressed with the horrors of this accident; and a few minutes more under the very propelling contractions of the uterus would have revealed a terrific laceration, extending, most probably, from the rectum to the vagina. We lost no time in introducing two fingers of the left hand to elevate the forehead, and using the forefinger of the other hand in imitation of Roonhuysen's lever, brought down the vertex, and then, supporting firmly, the perinæum with the left hand, the child was delivered safely, and the mother saved from so lamentable a misfortune. Velpeau thinks that laceration of the perinæum is most apt to occur in the fourth and fifth presentations of Baudelocque, when they cannot be converted into the first and second; in which the perinæum is put much more on the stretch than in any other presentation of the head.

The too early departure of the chin of the child from the breast, could not well present but in a very capacious pelvis, so as to admit the vertex to engage under the symphysis pubis, and then without making much progress, the chin departing rapidly from the breast and describing the arc of its circle in advance of the vertex. We have rarely met with this condition: but it may be the frequent cause of those very extensive ruptures in this part which we find occasionally recorded, as having required immediate and extensive sutures to keep the lacerated surfaces in apposition. Most writers attribute the accident to a small pelvis and narrow perinæum; we, however, are disposed to ascribe it generally, to rigidity of the recto-vaginal septum and implasticity of the vulvæ.

The evil *consequences* arising from this accident are manifold and sometimes of serious tendency; the principal are, 1. Want of support to the contents of the pelvis. When the recto-vaginal septum is ruptured so as to extend to the sacro-coccygeal wall, the uterus sinks and presents the worst form of procedencia; entailing the most insupportable sufferings, and connected, as it generally is, with inability to retain the fæces, render existence almost intolerable. 2. The great obstruction it presents in subsequent labours: the hardened and unyielding cicatrices acting as bands, prevent the descent of the head of the child, and interfere with the dilatation of the surrounding parts, without which the child cannot be born, save at the expense of extensive laceration. 3. The constitutional irritation sometimes excited by injuries and ligatures in this part, produces distressing symptoms in many distant organs.

The *treatment* of this accident is very simple in the commencement, but should we fail to effect reunion, it then becomes very perplexing. In slight cases after having cleansed the wound, the treatment consists in simply placing the woman on her left side; securing the parts together with adhesive strips; covering the wound with Goulard's cerate and keeping the patient perfectly at rest by tying the limbs. This, however, is not sufficient in most cases that come under medical treatment. Often it will be advisable to apply emollient cataplasms immediately, to bring on suppuration and granulation as early as possible, without which being speedily effected, the laceration is very tardy in healing, and frequently very imperfect when it does take place. So soon as the tumefaction subsides, granulations form, and there appears to be a disposition to unite, the parts are to be drawn together with adhesive strips adapted to close the wound, and to be covered with thin spread unguentum saturni, and all to be supported by a T bandage, or what will sometimes be found to be still more useful an X bandage. The bowels must be kept in a soluble state by an appropriate diet, of which, rye-mush and molasses is the best, or mush made of unbolted wheaten flour; and the wound must be firmly supported between two fingers during every evacuation of either the rectum or bladder.

If this plan of treatment be adhered to rigidly, in a short time adhesion takes place. Frequently, however, new skin forms over the lacerated surfaces, which keeps it from uniting; then we have all the difficulty of the original accident, save the hæmorrhage to encounter. This must be guarded against most diligently from the commencement, but when it does occur, we have found the caustic—nitrate of silver—most efficacious in promoting restoration. It should be applied with much care—the sound flesh bordering on the wound up to the edge of the new skin, should be shielded from the caustic running over it, by a covering of adhesive strips, and the caustic should be used as dry as practicable. After the skin has been removed, the denuded lips are to be brought into close apposition by adhesive strips, and secured with a T or X bandage, over pledgets of lint.

A writer in the *London Medical Repository and Review*, for May, 1828, says, that the mucous discharge which is constantly running over the breach of continuity, is the cause of these injuries being so very difficult to heal, and recommends, in such cases, that the patient be kept as much in the prone position as possible, and that a wide slip of lint, well smeared with balsam copaiba, be carefully placed over the whole of the laceration. Trainel introduced an ivory canula, surrounded with charpie steeped in balsam of Canada, into the vagina, to carry off the lochia and prevent the discharges from passing over the surface of the wound; and Dr. Davis proposes for this purpose a wooden tube of seven or eight inches in length, of sufficient diameter to admit of being charged with a long piece of sponge, which on being pretty firmly applied to the distilling orifices of the uterus, might be made to conduct every particle of secretion beyond the os externum.

Dupuytren, Dieffenbach and Roux recommend the use of stitches from the commencement; a practice we conceive exceedingly prejudicial to the ultimate welfare of the woman. It should be a dernier resort when every other expedient has failed.

We feel some delicacy in running counter to the opinions and practice of such high authority; but our convictions of truth and duty cannot be turned aside by the glare of commanding names; and particularly when the evil we apprehend, as resulting from it, is not seen in advance by the mere surgeon, as it seldom comes within his province, especially in Europe, where the three grand departments of medicine, physic, surgery and obstetrics, are kept so entirely distinct.

The objections to the suture in these parts are:—1. The irritation they sometimes extend to the whole system, as evinced in Roux's case, in which the patient died from phlebitis or purulent absorption after having had stitches inserted:—2. The transverse bridles they form, and the great obstacles they present to the distension of the perinæum in subsequent labours, which have been so great as to render it necessary for them to be divided by the knife before the child could be delivered. Ramsbotham mentions a striking case of this kind arising from the strong cicatrices following the restoration of a laceration sustained in a previous labour, in which he had to call on a surgeon to divide the cicatrix with a scalpel; and which case affords evidence of the general ignorance or blindness of surgeons to the sequences of these operations; for in this instance, the surgeon frankly acknowledged to Ramsbotham, when called upon to perform this office, his utter ignorance of obstetrical science, and his inability to determine any thing in regard to it; while at the same time, it shows the distinctive office of the surgeon and accoucheur, as Ramsbotham, though distinguished in his art, did not consider himself competent to undertake so trivial an operation as making a simple incision. An accident of this nature requires a surgeon who is an accoucheur of experience, lest he inflict a permanent difficulty to remedy a present inconvenience. Roux, an advocate for the employment of ligatures, says:—"It has not certainly been studied by surgeons with that attention its importance requires." To Dr. Dewees is due the credit of the suggestion which has mitigated the severity of this condition of things, and overcome much of the danger of this alarming obstruction without resorting to the knife, namely, extensive bloodletting. This measure does not, however, entirely overcome the ultimate difficulty, as the same state may recur at every subsequent labour.

As ligatures may occasionally become absolutely necessary, either from the extent of the injury, which renders it impossible to keep the parts *in situ*, or from default of the *vis medicatrix naturæ* affecting reunion, we proceed to detail the different modes employed by the most distinguished operators.

That adopted by the earlier surgeons, was the common or interrupted suture. Most of the writers who advocate this method, acknowledge that in almost every case of any extent, the stitches slough away in the course of a few days, and leave the wound in a worse state than at first, as the ligatures have to be replaced in a highly inflamed surface. This has occurred frequently to our more recent advocates for this practice, by whom the ligatures have been revived; for Merriman tells us, that in his day, it was "sometimes the practice to bring the edges of the wound together by suture; but this has *seldom, if ever*, been attended with good effects; on the contrary the ligatures have been found to slough away, and the patient has, in consequence, *been left in a worse condition* than before. This mode of practice, therefore, is *discontinued.*" The same result of these operations is acknowledged by Saucerotte, Dupuytren, Dieffenbach and Roux.

Dupuytren prefers the *uninterrupted* suture: but independent of the great suppurating surface occasioned by the sloughing stitches, it must be attended by great destruction of the edges of the wound, and leave a serrated welt, which presents an insuperable barrier to distension in subsequent labours; a consideration always to be kept in view in these cases.

Noel suggested the *twisted*, or hare lip suture, and for some time it was preferred above the other modes; but it has disadvantages even over the common suture; and we do not find it any more successful than the others, even in the hands of Dieffenbach, who often resorts to both in the same case and at the same time. But in almost every case in which there was the slightest apology to justify their insertion, and in which he used both the *interrupted* and *twisted*, they tore out, at least partially, and left the wound, to a greater or less extent, ununited.

Roux has substituted the *quilled* suture, and reports much success, if leaving large, rounded, pouting cicatrices can be accounted success, in young married women still liable to conception and the accumulated horrors of childbirth to which it subjects them. It must be evident to every one who is practically conversant with this mode of closing wounds, that the lips of the wound are apt to be everted by the pressure of the bodies placed under the stitches at the sides of the rent, which must add greatly to the welt in the cicatrix, and, subsequently, present an insurmountable obstacle to dilatation in succeeding labours. It has been proposed to superadd the *interrupted* suture to the *quilled*, to keep down the edges. It would scarcely require another duplicature of stitches to render the unfortunate woman's perinæum a complete lattice-work blind, and become as unyielding as the newest patented bridge for railroad viaducts.

Dr. Mettauer, of Virginia, relates an interesting case of ununited paturient laceration of the recto-vaginal septum, successfully treated with leaden ligatures, in the thirteenth volume of the first series of this Journal. He considers them "not only less irritating and less liable to cut out, when tightly drawn than any other material, but infinitely more convenient and effective in maintaining a uniform and perfect apposition, by the ready facility of simply twisting them; and without making any material encroachment upon the margins of the cleft."

Were we compelled to use a suture at all, we should employ the simplest —the interrupted—either of silk, flax thread or the leaden wire, and take the stitches sufficiently deep to hold the wound together for some days; but we honestly believe, that in almost every case the patient is better without them; and that in many instances, they are wantonly, uselessly and injuriously applied. It is admitted, generally, that so long as the sphincter ani is not torn, that nature is competent to the cure, and all that is required, is, that the patient be kept at rest, and the parts properly attended to daily; but the surgeons have an indomitable itching to dip in their needles on the most trivial occasions, as Dieffenbach acknowledges in the codicil of nine cases to his former essay, that he put *two twisted* sutures, at one dressing, in a laceration of the vulva of no greater extent than an *half inch:* while on the contrary Dr. Davis details a case of spontaneous cure, where a complete rupture of the sphincter ani had taken place; and remarks upon these operations, that "when adroitly performed and firmly connected, they have been known in *some rare* cases to succeed: whereas unquestionably, with the best care, they much more frequently fail, in consequence of the ligatures tearing their way out, and leaving the intermediate gap in a worse condition than before." Out of the nine cases just alluded to as having had sutures inserted, by Dieffenbach, *three* were too trifling to require an operation, *two* were from accidents not connected with the parturient state, but simple lacerated wounds; and of the remaining four, only *one* united kindly by the first intention, and the other *three* were found ununited after the removal of the stitches; and of the eleven operations reported by M. Roux, a copious suppurative discharge from the vagina, followed, in all, on the second or third day, and an uneasiness, more or less considerable, was experienced in voiding the urine. A cure was effected in *seven* by a single operation. In one the operation was unsuccessful the first time, but succeeded perfectly the second time. *Two* of the patients *died,* one from the effects of phlebitis, or of purulent absorption; and the other, (in whom the laceration of the perinæum was complicated with prolapsus of the rectum and of the vagina,) from chronic enteritis, to which she had long been subject. In the remaining case, every thing went on favourably till the *fourteenth day,* when, after a sudden action of the bowels, the adhesion of the united surfaces gave way; a second operation was however *to be* performed.*

Where the rupture extends through the internal septum between the rectum and vagina without involving the sphincter ani, Sedillot proposes to divide the sphincter and establish a complete recto-vaginal fissure before the sutures are inserted: though from his remark on one of Saucerotte's cases we should not suppose that he thinks very highly of the suture, for here he says, that they were "not only of no use but rather to have retarded the process of cicatrization."

One of the principal impediments to success in the treatment by sutures, is the evacuations from the bowels which almost invariably tear away the stitches; and the strictest attention is enjoined to keep them quiescent as long as possible; for which purpose laudanum is freely given to induce and keep up constipation, as this movement whenever it does recur within four or five days after the insertion of the stitches, tears open afresh the ruptured surface and subjects the patient to endure a new series of ligatures, in this highly delicate and inflamed part. Saucerotte saw a case which was torn open, from this cause, on the *eleventh day* after the operation; and it occurred to one of Roux's cases, as we mentioned above, *fourteen days* after it had been stitched, even with the doubly secured *quilled* suture.

Several expedients have been devised to obviate this evil. Saucerotte proposes to introduce a canula of lead, surrounded with a piece of linen covered with balsam Peru, into the rectum, to carry off the contents of the bowels; but notwithstanding all this precaution, he found the stitches give way under the operation of an alvine discharge.

The great object to be attained with surgeons, by the introduction of ligatures, is to cause reunion of the divided sphincter ani, for the sole purpose of restraining the involuntary evacuations of the bowels; but a resort to stitches is not always necessary, as nature is adequate to remedy even this when left to her own operations: which she accomplishes by forming a valve when the sphincter ani does not unite perfectly. "MM. Petit and Gardien," says Burns, "notice the fact that the stools may ultimately come to be retained, but do not seem to be aware that this depends on the formation of a valve. They think it owing to the sphincter regaining its power." To overcome this loathsome state of things until the sphincter regains power, or nature supplies a substitute, Gooch recommends "a truss composed of a circular band of steel which goes round the body just above the hips; from behind a piece of steel somewhat elastic, and so fixed as to admit of being moved to either side, and incurvates forward between the nates, and then turns a little upwards. At the end of this piece of steel is an ivory ball, on which is placed a sponge sufficiently large to cover the vulvæ, perinæum and anus: when the patients evacuate the bowels they have only to turn it aside."

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* Medico-Chirurgical Review.

Young practitioners must be cautioned not to be over anxious to do too much in these cases; for it sometimes happens, that from a great desire to make a perfect restoration of the parts, they may unite it so far as to require another operation, to open it again with the knife, to enable the patient to exercise the legitimate gratifications of the married bed. This happened once to one of the most distinguished physicians of our country, who had to dilate the part with a scalpel; and Dupuytren confesses that it occurred to one of his patients, upon whom he had operated, for this accident, with the interrupted suture, which united so firmly that sometime afterward the woman and her newly married husband applied to him for relief from this embargo on their matrimonial privileges. This may occur readily, though it would scarcely be suspected, the operator not imagining that the cicatrix would extend any further than the wound, and leave the vulva in the original state. It does not, certainly, extend any further than the wounded surfaces, but during the process of adhesion there is a great retraction of the parts with a drawing in of the labia, which contracts very much the entrance of the vagina. The rule to be observed in these cases, is to stop and be satisfied with the union so soon as there is adhesion sufficient to support the contents of the pelvis: for retraction of the parts continues to take place after the adhesive process is fully accomplished.

There is not a case requiring medical attention in which the trite adage is more truly verified than in this accident—an ounce of prevention is better than a pound of cure:—and this position has been, at all times, justly appreciated by those alive to the result; and many efforts have been made to restrain its occurence which it may be proper, *en passant*, to bring to the notice of the reader. Mesnard thought it was only necessary to push the coccyx backward to prevent it, or to insert two fingers between the head of the child and the perinæum, when the head arrives at the vulva. The first is impracticable, in many cases, as the coccyx is sometimes very inflexible; and the second, we apprehend, would only add to the difficulty by increasing the volume which forces fearfully the already over-distended perinæum. The author of the *London Practice of Midwifery*, attributes the accident to the voluntary efforts of the woman in aiding the expulsion of the child, and thinks, that if she could be restrained, it might be avoided;—yea, that if we could only divert her attention so much as "keep her talking, or even to count twenty, she is perfectly free from the danger of breaking her perinæum!!!" Flamant proposes to take hold of the skin of the buttock or posterior part of the pelvis with both hands and draw it forward as much as possible, to relieve the distension of the perinæum, just at the period of the birth of the child. Merriman admonishes the attendant "carefully to abstain from hurrying the head through the os externum, to avoid irritating the vagina and inner membrane of the pudendum, to guard against removing the mucous discharge naturally secreted for moistening the passage; occasionally to introduce lard or tallow to moisten and soften the parts when they feel dry and harsh or heated, and to employ mucilaginous injections; and to keep the hand, covered with a soft napkin, against the perinæum, so as to afford a regular and equal support to the parts during the passage of the head." By vigilant attention to the precautions of the latter writer, most women, under very unfavourable circumstances may be conducted safely through their travail, and be saved the great misery this accident inflicts upon the devoted victim.

When called to a case of labour where there has been a laceration of this kind, which can be readily detected by the absence of the fourchette and the presence of a large cicatrix, and transverse bands from the sutures, acting as bridles, we should lose no time in preparing for the difficulty we shall have to encounter; and in addition to the foregoing suggestions we should use, incessantly, emollient fomentations and relaxing cataplasms—of which the leaves of the stramonium or extract of belladonna, may answer a good purpose, though we have not had an opportunity of trying them. However, these articles may answer or fail, after the cataplasms of *althæ* or *ulmus* have softened the parts in some measure, then warm lard is to be repeatedly applied externally and within the vulvæ, until we find the parts distending gently: but the most prominent and efficient remedy is prompt and copious bloodletting, which produces more relaxation than can be effected by any measure; but which should not induce the attendant to omit the employment of other valuable adjuvants.

BORDENTOWN, N. J., *October 26th*, 1840.

ART. VII.—*Experiments in the Revaccination of Children with New Virus.*

By T. S KIRKBRIDE, M. D. of Philadelphia.

SMALL-POX and varioloid disease having been unusually prevalent in this city and its suburbs, during the past spring, I was induced, while attending two of our public charities to revaccinate the inmates of those institutions.

The number subjected to the experiment is much smaller than I could have desired—still the results may not be void of interest. Two hundred and nine children were revaccinated, upon some part of whose limbs, a perfectly formed, rounded, stellated, or punctated cicatrix was found. All others, upon whom this indication of previous vaccination was not discovered, are excluded from this report.*

Of the total number, one hundred and thirty-four were boys, and seventy-five were girls; and the average ages about twelve years, the extremes being six, and twenty. The *virus* used was eighteen and nineteen removes from the cow, being derived from that forwarded by Mr. Estlin and Dr. Carpenter, of Bristol, England, to Professor Dunglison, of this city, near the end of 1838, and from which source of supply, a large number have been vaccinated by the vaccine physicians and private practitioners of Philadelphia. The dry scab was employed in every instance. A portion of it being softened to the proper consistence was placed upon the raw *cutis*, which had been exposed to a small extent, by abrasion of the cuticle with a dull and round pointed lancet; a few crosses with the same instrument, but rarely sufficient to produce a drop of blood, completing the operation—a plan, which, in primary vaccination, we have rarely found to fail. These scabs were taken from the arms of healthy children under one year, except a small portion from an individual thirteen years of age.

Of the two hundred and nine children with perfect cicatrices, forty-four, or rather more than twenty-one per cent. had the disease perfectly—presenting precisely the same characteristics which I have observed from the use of the new virus in primary vaccination. The proportion of successful cases did not differ in the two sexes. It is also proper to remark that in several cases there were vesicles upon the arm which ran an irregular course, i. e., there was slight phlegmonous inflammation—but all such are rejected from the report.

Three of the cases had sloughing of the arm which left ulcers that were several weeks in healing. Of these three, one was in bad, the others in perfect health.

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* The subjects of this experiment were the inmates of the "House of Refuge," and the pupils of the "Pennsylvania Institution for the Instruction of the Blind."

The Refuge is an asylum for children who have just commenced a career of crime; for those deserted by their natural protectors, or for such as cannot be restrained by parental authority. Not a place of punishment, but a school for the reformation of bad habits, and the inculcation of good ones; improving the physical health, and cultivating the mind, by constant occupation, strict discipline, and a well-regulated regimen. It may be considered an appropriate part of the mild Pennsylvania penal system, whose grand object is reformation, and the prevention of crime, rather than its punishment. A very large part of these children are orphans, and nearly all so much neglected by their parents, such outcasts upon society, that little can be learned with certainty of their previous history or diseases, and on this account, the one test of previous vaccination (the cicatrix) was all we had to depend upon. Although the pupils of the Institution for the Blind differ totally in character from the inmates of the Refuge, still the same obscurity exists respecting early incidents in the lives of many, who have been rescued from a state of neglect and destitution by benevolent individuals, who had seen how practicable it was to instruct this unfortunate class in literature and some of the arts, and to make them worthy members of society.

Although some members of the profession appear disposed to reject the new virus, from the severity of the symptoms which it induces; yet, except in the three cases just referred to, we have never seen sloughing or other unpleasant effects. It does certainly produce more decided symptoms than the virus which has been in general use for years past; it is slower in its progress to maturity; the inflammation is generally greater with more constitutional disturbance; the scab is much later in falling off, and adheres strongly in its central point—conforming in a great measure to the first observations made by Dr. Bridges, of this city.* My own observations induce me to put more confidence in its prophylactic powers than in the old virus, although this point can only be settled by time, and an enlarged experience by the profession generally.

To test the virus obtained from revaccination, I used part of a scab in about twenty of the cases embraced in this report, and subsequently in children who had never had the vaccine disease, and with the same success as from crusts derived from primary vaccination. It was this scab that was alluded to in a previous part of the paper as having been derived from an individual thirteen years of age.

The recent lymph so generally adopted for vaccination in Great Britain, and on the Continent, is here rarely used—while the dry scab, which is spoken of in some reports on revaccination as nearly always failing, is, we believe, in this country almost universally employed.

In none of my cases, was more than one vesicle observed in those subjected to revaccination.

Two or three took the vaccine who were said to have had small-pox in infancy; but from the character of the children given in a previous note, there may be some doubt on this point. Of ten thoroughly scarred from that disease, no one was affected by the vaccination. In five children who had no cicatrices, and who had been several times vaccinated unsuccessfully with the old virus, there was no appearance of a vesicle.

My friend, Dr. Pepper, assisted me in a number of the cases at the Refuge, and observed the results in all.

I regret that other engagements prevented my repeating the experiment in those cases that failed in the first instance.

PHILADELPHIA, *October 7th*, 1840.

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* American Med. Intelligence, vol. ii, p. 303.

Art. VIII.—*On the Influence of Coffee over the narcotic effects of Morphia.* By Blanchard Fosgate, M. D. of Auburn, New York.

To relieve myself of a severe attack of toothache, I took one ounce of a solution, in which the sulphate of morphia amounted to one and one-fourth grains—equal to about seven and one half grains of solid opium.

When this dose was exhibited, there had been no food or drink taken into the stomach for eighteen hours, which was in a very empty condition. The absorbents being ready for action, this small quantity of fluid was quickly taken up and distributed to the system. In about twenty minutes the dental pain subsided.

It will be necessary to remark that I am not in the habit of using opium in any form, but have, on previous occasions found two drachms of the above solution sufficient to produce sleep.

After the lapse of half an hour, symptoms indicative of the constitutional effect of the remedy began to manifest themselves;—first, in a sensation of thickening and stiffening of the muscles of the back of the neck, which soon extended to the flexor muscles of all the limbs, and which continued until the morbid action was broken in upon. This was not a condition of rigidity such as obtains in cramps, but subject to volition, and was rather of that feeling that we imagine would be experienced in a paroxysm of catalepsy, could the patient be made sensible of the movements of his limbs.

At this time (five hours after it had been taken,) great nausea supervened, and many efforts to vomit ensued, without, however, ejecting much more than the natural secretions of the stomach—twenty-three hours having elapsed since the introduction of any kind of food or drink into this organ.

These effects of the narcotic which were continually increasing, created an apprehension of danger, and I determined to relieve myself by distending the stomach with warm tea, and to allow the muscular contraction already induced, to expel it, thereby expecting relief from the prostrating sensation of nausea which had become very severe. The tea was no sooner swallowed than thrown up, and an almost unconquerable loathing was created at any remedy the mind could suggest. Drinking more tea was attempted two or three times with the same result and abandoned—the symptoms increasing in severity.

Vegetable acids being recommended as antidotes to the poisonous effects of opium, sour cider, a little sweetened with loaf sugar was taken, and one mouthful would be ejected before a second could be swallowed. This immediately produced an additional symptom, being one apparently of permanent contraction of the stomach, accompanied with distressing nausea, but no pain. It was a sensation, if I may so express myself, of determination on the part of the organ to resist the further introduction of any thing.

These trials having failed, coffee was proposed, and an hour elapsed before it could be prepared. During this interval, the severity of the symptoms became more intense, and a considerable degree of prostration and apathy were added to the already accumulated influence of the narcotic. The circulation was full but slow, and considerable pricking of the skin felt at this time.. One gill of *cold* strong coffee was swallowed, accompanied with the same loathing as the former prescriptions, was retained about five minutes and ejected. With this, the whole character of the symptoms changed—the loathing abated—the nausea in part subsided, and that peculiar sensation of contraction relaxed its hold, and submitted as to a charm. The coffee was repeated several times during the night, at each trial grea improvement being manifested in the symptoms, and eventually it effected the cure.

Subsequent to the commencement of the nausea and previous to the exhibition of the coffee, my mind was depressed, and considerable anxiety pervaded it, but it was at the same time restrained to a consideration of the condition of my system, and no pleasurable sensations had been experienced. The coffee, however, soon raised this weight of oppression, and, I may add, also the controlling power of reason, and in their stead, fancy in her wildest range roved on through scenes of rapture and of splendor; which the mind of the patient, unassisted by such powerful influences, is utterly incapable of attaining.

This delightful revelling of the imagination continued five or six hours, and, during this interval, my attendants, who spoke to me several times, could not determine whether I was asleep or not;—neither can I settle the question myself; for, if asleep, I awoke so easily that the transition could not be perceived. But I am conscious that this state of mental delirium ended in a sound sleep which was succeeded by a few hours of lassitude.

It will be remembered, that in this case, the morphia was taken after a fast of eighteen hours, in liquid form, and when the absorbents were in a condition to distribute it to the system with as much rapidity as their function would admit. If it had been solid opium taken in place of fluid morphia, the effect would have been less rapid, and probably more permanent, and the remedy could not have been brought to act with such precision until after the whole of the substance had been disposed of either by ejection or absorption, when I think a strong extract of coffee administered cold, and in small and repeated draughts would have a decidedly beneficial influence over the poisonous effects of this drug.

The counter tendency of the coffee, so rapid in its remedial effects, was owing in a great measure to the inanition of the stomach which had been increased by an additional fast of five hours. This must have rendered the absorbents still more eager in their functional operation, and which brought the influence of the coffee to bear with such power upon the cause of derangement.

The coffee was administered cold with a view to prevent emesis—very strong, and in small quantity. The effect produced was almost immediate and radical. The *modus operandi* is left a subject for further investigation.

The phenomena which were presented while the system was under the influence of the narcotic were unusual, and they can only be accounted for by reference to the strange anomalies to which the nervous system is sometimes subject.

The view I have taken of this subject has led me to believe that there is a principle in the coffee bean that will, when thoroughly understood and correctly applied, go far towards disarming opium of many of its fearful effects.

There is another fact worthy of consideration, that both the influence of the morphia and coffee are observed upon a person in good health, and unaccustomed to the habitual use of either. This may possibly furnish some data for their therapeutical application.

It is a record of oriental history, that to those persons who use opium as a means of intoxication, coffee is the most highly valued beverage. This they drink strongly concentrated and unmixed after their habitual debauch of opium eating. It has been a common practice, from time immemorial, and the source of its celebrity depends upon the circumstance of its dissipating the lingering effects of their favourite indulgence. This well established fact in connection with the remedial agency it exerted in the foregoing case, brings me to the conclusion, that a further investigation of this subject will result in much useful knowledge.

Art. IX.—*On a Form of Sore Mouth peculiar to Nursing Women.* By Frederick F. Backus, M. D., of Rochester, New York. (Communicated in a letter to Dr. Henry Bond of Philadelphia.)

During a practice of 24 years in this city, I have every year met with many cases of a *sore mouth*, which is, without any doubt, peculiar to *nursing women*. It has been much more obstinate in its character, during some seasons, than others, although it is always a very troublesome complaint; to the patient one of great suffering, to the physician one of much perplexity. Why it should be more obstinate some seasons, I have never been able to discover, but such has been my experience. This complaint frequently shows itself during the last months of gestation, and oftentimes a course of medicine *then* adopted and carefully pursued, prevents a *severe* attack of it after confinement. When occurring after confinement, as it most usually does, it makes its appearance at different periods in different individuals, sometimes appearing within the week, and onward from that time to two, three and six months. The accession of the disease is often very rapid from apparent health. It often, for instance, comes on violently in the evening, while during the day there had been no appearance of it, and the patient was well, and, it might be, actively engaged in household matters, had taken no unusual food into the stomach, and was not suffering from any unusual irregularity of the stomach or bowels. It comes on at other times gradually, with slight ulceration of the tongue or fauces, with a general soreness of the latter part following. *As to the subjects* of this peculiar sore mouth, it is, in the first place, confined to *females*, no *man* ever had it, or ever will. It attacks all classes of females who are *nursing*, or who have advanced to the *latter months of pregnancy*, and none others. As to the general health of the subjects of it, I may say that no class of females are exempt from it. I have very often seen it in those of the most robust constitutions, who have ever enjoyed good health, and who have never been dyspeptic, or troubled with acidity of the stomach, or any other derangement of the alimentary canal. I think, however, that females of a leucophlegmatic temperament and of dyspeptic habits, with habitually *slow bowels*, are perhaps more liable to attacks of it than others. But none are exempted from it, no matter how fine their health. In the onset of the disease, it seems local, but after a continuance for months without permanent relief, I have no doubt the same morbid irritation, that exists upon the tongue and fauces, does affect the œsophagus, stomach and bowels generally; these are the cases that terminate fatally. But often as a *local* disease, it will resist an active, local and constitutional treatment for months without *permanent* relief, the appetite still remaining *good*, and the functions of the stomach and bowels in a normal state. The *children* of females labouring under this form of disease, are uniformly healthy and robust, as they are usually well supplied with food from the mother, as the secretion of milk is commonly *very large*, until in the last stages when, the patient becoming reduced by starvation, the milk fails.

Symptoms.—As I have before observed, the accession of the disease is often sudden, extremely so; in three hours time, after seeing your patient in health, you may find her with a scalded tongue and fauces, and unable to converse or take food. The first sensation of the patient, (referring to the tongue,) is that of *scalding*. They uniformly so describe it; the pain is often intense, like a severe scald. The colour of the tongue is very peculiar, being *pink*, the edges of the tongue and roof of the mouth have a deeper hue of this colour, accompanied with a most profuse watery discharge from the mouth, extremely hot, so much so as to give a scalding sensation to the face when passing over it. The appetite is usually very good, often ravenous, but no food or drinks except the blandest can be taken into the mouth without producing the most intense pain. The food must be of a mucilaginous or farinaceous character. After a continuance of this state of the mouth for a few weeks, there appear slight ulcerations on the end or edges of the tongue, and about the fauces in different parts. Sometimes the disease commences with slight ulcerations on the end and edges of the tongue, and this general scalding of the tongue and fauces follows. The bowels are usually constipated, or soon become so; no fever, but oftentimes excessive irritation of the whole system, in consequence, probably, of the want of rest, as the continued pain of the fauces, and the excessive and constant flow of burning saliva, prevent any comfortable rest night or day; tongue always free from any coat.

Treatment.—I have, for the most part, treated the disease as arising from a vitiated state of the secretions of the stomach, kept up in some unknown manner, by the process of lactation; although in a great many cases I have had no reason to believe the stomach much disordered, for the patient three hours before might have been perfectly well. I formerly gave emetics, cathartics of calomel, or milder ones of blue pill, with local applications to the mouth; but this method very often failed; the disease, although mitigated for the moment, still went on more and more severely. I have used the bismuth and other metallic tonics following this course of medicine, without effect. About five years since I adopted a new method, which I have found more efficacious than any I had before pursued. As soon as the first symptoms of the disease appeared, I made a free and continued use of the following pills. ℞. Carb. ferri, grs. lxv; pulv. rhei et gum. aloes āā grs. xxv; pulv. ipecac. et sap. Hispan. āā grs. xii. M. ft. mass. divid. in pill No. 50. Two of these should be taken twice or three times a day, or often enough to keep the bowels *very open.* I have always observed that an artificial diarrhœa produced by them usually affords almost immediate relief, and often during the continuance of the disease, a spontaneous diarrhœa from any cause, relieves the mouth at once. These pills, accompanied with an astringent wash of the black-berry root, or the marsh rosemary, or a weak solution of nitrate of silver seldom failed to afford relief, so that I promised myself I had found *the specific.* But latterly, some cases have resisted this and every other mode of treatment, and I have had to wean the child, when the disease was cured at once and did not return again.

It is a very singular disease. Why it should exist only during gestation and lactation, is the question. That such is the fact, however, no physician here doubts for a moment.

ROCHESTER, *June,* 1840.

Art. X. *Case of Gun-shot Wound of the Hand, Fore Arm, and Arm, with Fracture of the Humerus, successfully treated.* By R. W. Lindsay, M. D., of Alexandria, D. C.

L—— E——, ætat. 10, was wounded, April 11th, 1840, by the accidental discharge of a fowling piece, whilst holding it by the muzzle and drawing it towards him. The load entered the upper and thick part of the palm of the hand, slightly grazing the wrist for about an inch, then tearing up the muscles in the most shocking manner, half way up the fore-arm, exposing the tendons to view; it entered the arm anteriorly a few lines above the bend of the elbow, fracturing the os humeri about an inch and a half above the joint, then passing upwards, about half way up the arm, it made a slight opening posteriorly, but without any portion of the load apparently having made its exit.

On the first view, this case presented a very formidable appearance, and considering the situation of the wound in the arm, it appeared almost impossible that the brachial artery could have escaped very serious injury; but on examining the pulse, it was found to beat with the same force and regularity as in the sound arm, which showed, that if the artery was injured at all, it was not so seriously as to endanger sloughing and hæmorrhage.

Professor Gibson says, that in some cases, large arteries are pushed entirely to one side, without sustaining injury. On examining the course of the artery at the time, and since the wound healed, this must have taken place to some extent in the case under consideration.

On introducing the finger between the ends of the divided bones, there appeared to be simply a transverse fracture; no loose pieces of bone could be felt. The arm was now swelled to double the natural size, the pulse 110 in the minute, but regular, and, though reaction had completely taken place, there was nothing in the action of the pulse, or the general system that indicated venesection.

In consultation, five physicians being present, the following considerations were discussed: In the first place, mortification might take place in a day or two, and deprive the patient of the chance of amputation; the brachial artery might be so injured as to slough, and the patient run the risk of dying from hæmorrhage; the capsular ligament of the joint might be torn up, consequently greater danger to be apprehended from inflammation; tetanus might supervene, and in taking into view the extent of the injury, and the part wounded, this seemed a not unlikely occurrence. On the contrary, the patient was young and healthy, and no constitutional symptoms had occurred to induce the belief, that any important blood vessels or nerves had been seriously injured.

A majority were in favour of immediate amputation, but as there was a want of unanimity, it was determined to wait until a surgeon from Georgetown should arrive. When this occurred a more thorough examination took place, extension, and counter extension were made, which enabled us to examine the case more satisfactorily, and I now became fully convinced of the correctness of the opinion I had given in the first instance.

The patient passed a tolerable night, sleeping composedly for half an hour or an hour at a time, and in this way sleeping two thirds of the night: though when awake he seemed to suffer much from pain. The pulse continued at about 110, and regular, but did not at any time indicate the necessity of venesection.

In the morning a physician from Washington City arrived, and another consultation took place, which resulted in a determination to make an effort to save the arm.

Our attention was now turned to the dressing best adapted to the wounds, and to the general treatment. The patient had been placed in the recumbent position, the arm extended and laid on a pillow, and by this time the limb had become so painful, that the slightest motion created the most excruciating pain. Cold water dressings had been used, giving very marked relief. Pledgets of lint were applied, and kept constantly wet with cold water; and I would here observe that the effects of the cold water dressings were most remarkable. At frequent intervals the patient suffered severe pain, particularly when roused from a slumber, and in no instance did the cold water fail to give more or less relief, and had a most remarkable effect in tranquilizing and composing him.

In Florida, during the campaign of 1836, I had an opportunity of treating a great many cases of gun-shot wounds with the cold water dressings, but in no case were its beneficial effects more remarkable, than in the one under consideration, and I cannot too earnestly recommend this mode of treatment in the first stage of all gun-shot wounds.

Aperient medicines were administered, and the antiphlogistic system was strictly attended to, throughout the whole treatment.

The water dressings were continued three days, we then substituted emollient poultices in their place, the sloughing was considerable, and on the fifth or sixth day the wounds became fœtid: to correct this, we used the charcoal and carrot poultice, which in a few days had the desired effect.

The wounds were now suppurating, and in every respect in an improved condition, and were now dressed with cerate. The pulse during this time ranged from 100 to 115, but when the suppurative process was completely established there was an evident improvement, the pulse becoming less frequent, and the general system much improved, and every thing progressing favourably, even beyond our anticipations, At this stage of the case it became necessary to use tonics, and a more nutritious diet.

We likewise used the syrup of sarsaparilla, and from its beneficial effects on the general system, it had a happy tendency to facilitate the healing process.

After the suppurative process was established, shot from time to time were discharged, together with the wadding of the gun. The load, however, had taken different directions, and at some distance from the posterior openings, an evident fluctuation was felt; on opening it, matter was very freely discharged, and with a small scoop a number of shot were extracted.

The limb was now placed in a curved splint made of tin, extending the whole length of the arm and forearm; this gave better support to the limb, and enabled us to move and dress it with greater facility and ease to the patient.

At the end of three weeks the free discharge from the wounds was much abated. On measuring the arm, it was found to be at least an inch shorter than the sound one, extension and counter extension were necessary, which was effected by the use of the curved splint, it being first well lined with surgeon's lint, and then applied with a Scultetus' bandage. The bandages were applied the whole length of the arm and fore arm, and answered the object most effectually; as we anticipated the bones commenced uniting, and in about four weeks reunion was established.

It was now important to turn our attention to the elbow joint, there being danger that anchylosis might take place. To prevent this, a carved splint with a hinge at the elbow was used, which was first lined, and then applied with the common roller; to the upper part of the splint were attached two pieces of wire, the lower ends of the wires ending in hooks, which were hooked in holes in the lower portion of the splint, these holes were placed at intervals of an inch, and we were thus enabled by degrees to flex the arm. At this time the arm can be used freely and without any difficulty, from the extended position, to something more than a right angle. The muscular action of the arm is fast recovering, and will no doubt soon be restored. The arm is now of the natural size with the exception of the fractured portion, which is enlarged from the ossific matter thrown out in the reunion of the bones. A gradual absorption is going on, and at this time camphor liniment is used to excite the action of the absorbents to remove any extraneous matter that may exist about the joint, and which prevents its full motion. This, in time, there is little doubt will be effected, but as such a process must necessarily be slow, it may be some months before the arm is fully restored in every respect.

On no subject have the opinions of surgeons been more contradictory, than as to the propriety or impropriety of amputation, generally for the want of a full and and fair investigation. For instance, military surgeons have been accused of amputating very unnecessarily; but when we reflect that after an engagement, the wounded are hurried from place to place, and deprived, as they must be, of the requisite attention, their wounds not dressed for days together; that consequently great pain and inflammation must necessarily follow, which may endanger or even sacrifice the patient—under these circumstances with a full view of the case before him, the prudent and experienced surgeon amputates on the field of action. But in domestic life, where every convenience and comfort can at once be afforded the patient, the case is very different. I hold it improper to amputate here, except where the prospect of saving the limb is most unfavourable; and in forming a decision in all cases, particularly those occuring in civil society, the peculiarities of constitution, the age, habits, &c., of the patient, should always be carefully taken into consideration.

ALEXANDRIA, D. C., *August*, 1840.

MONOGRAPH.

Art. XI.—*On the Causes and Treatment of Pseudarthrosis, and especially of that Form of it sometimes called Supernumerary Joint.* By Edward Hartshorne, A.M., M.D.

Pseudarthrosis* (from ψευδης false, and αρθρον a joint,) may be defined to be a spurious, misplaced articulation instituted between bones or parts of bone; supervening, in the latter case, upon a fracture, and in the former on a dislocation. The first and more important species is presented in the seat of fracture of a broken bone, in which, at the proper epoch, there is still no consolidation. This is the *calli defectus* of the earlier writers; it consists either in the entire absence of callus, or in its improper distribution and defect of continuity from fragment to fragment. Such a condition presenting a point of motion in any part of a naturally unyielding bone, must obviously impair, if not destroy its function, and thus render the limb to which it may belong, proportionately useless. Béclard appropriately named this the supernumerary joint. (*Gén. Anat.* Trans. by Togno, p. 401.) The second form is the sequel of a neglected luxation. The joint is then created between the unreduced head of the dislocated bone, and the non-articulating surface of the bone and adjoining soft parts, with which its violent displacement has brought it into contact.

Of this kind also are the joints artificially produced by the celebrated operation of Dr. J. R. Barton, for the relief of anchylosis; and by White's operation for the resection of the diseased heads of bones.

The evidently vicarious nature of the second form of pseudarthrosis, as the only substitute for the previous natural articulation, has suggested the name, given also by Béclard, of supplementary joint. It possesses minor interest in most of its relations, and shall not occupy further attention in this paper. As a disease, it requires no treatment but such as will facilitate the completion of what is but a salutary change, intended to repair the loss of a congenital organ.

John Hunter,† Boyer,‡ and some others, made a verbal distinction of the pseudarthrosis succeeding fracture, into two varieties according to the anatomical characters. The simpler structure in which the ends of the bones were connected by a condensed cellular, or a fibro-cellular medium, was termed by them, ununited fracture, disunited fracture, unconsolidated fracture, &c., while they designated as genuine false joint, only the "accidental diarthrodial articulation," in which the extremities of the fragments were unconnected by any intervening substance, and merely held together by a loose and imperfect adventitious capsule.

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* Synonymes. *False, Preternatural, Accidental,* and *Artificial joint; Fausse Articulation, Articulation Anormale, Accidentelle, contre nature, Falsche Gelenke.*

† Lectures on the Principles of Surgery, edited by Palmer, vol. i, p. 504.

‡ Malad. Chirurg. tome iii, sect. 4, art. iv.

Others, again, employ [the terms ununited fracture, &c., alone; and comprehend by them both the irregular amphiarthrosis or flexible union, to which Hunter limited the meaning of these words; and the abnormal diarthrosis or bursal structure, which is, in reality, something more than a mere want of union in a fracture.

At present, the needless distinction of Hunter and others, is disregarded; and pseudarthrosis, false joint, and other terms of that class, are usually applied, in preference to the less logically accurate phrases, ununited fracture, &c., indifferently to every form and variety of the structural derangement. We propose to adopt the derivative at the head of this article, as the generic title of the lesion of which it treats; and to consider the two species, after Béclard, according to the primary affection, as supernumerary joint and supplementary joint.

In supernumerary joint may be recognised a significant expression for an infirmity which always creates more or less discomfort, and is often extremely distressing. If it be seated in one of the extremities, where, indeed, we most commonly find it, the limb is crippled, if not disabled, its muscles shrink from inaction, it is often shortened and crooked from displacement of the fragments, and an exuberant growth of irregular callus may increase the deformity. In this manner the part may become a useless, misshapen and unwieldy mass; sometimes so burthensome and even painful, as to render amputation itself a welcome alternative.

The calamity, however, is not always so deplorable. The character and position of the articulation may be such as but slightly to involve the use of the limb. This is more apt to occur in the upper extremity, where the lesion may occasionally exist without causing serious inconvenience. Mr. Syme has seen want of union both in fracture of the humerus and that of the fore-arm, in which the bones having been broken transversely, and the muscles being equally balanced, the limb, although it was quite flexible at the injured part, yet in a state of repose it could execute every exertion it was called upon to perform. (*Clinical Reports*, by Professor Syme, *Edin. Med. and Surg. Journ.* July, 1835.) Velpeau quotes instances of this, also one of a femur reported by M. Yvan as unattended with the usual loss of power. (*Méd. Opératoire*, tome ii, p. 582, 1839.) M. Cloquet gives an account of an individual, the upper third of whose humerus had been long destroyed without the voluntary motion of the arm being prevented. A man died in the Pennsylvania Hospital a year or two ago, in whose fore-arm there had existed a supernumerary joint of the radius for 35 years, without interfering with the active pursuit of his vocation, which was, to ply the needle as a tailor.*

Happily, fractures in general unite with so much facility and certainty, that, notwithstanding their great frequency, the untoward result of their failure to heal is comparatively rare. Only 13 cases† have been admitted into the wards of the Pennsylvania Hospital since the year 1829, and only one case of confirmed supernumerary joint has been known to originate in the wards of that institution in the last 40 years, during which time about 4000 fractures have been treated there. Yet this termination of a fracture happens sufficiently often, under certain circumstances, to fill the unwary surgeon with embarrassment, and to demand all his resources, perhaps in vain, to avert the misfortune. Not to dwell upon the misery it may entail upon the patient, there is enough in it that is harassing to the mind of the surgeon himself, as a provokingly tedious and obstinate disease, to give the study of it strong claims upon his sedulous attention.

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* The preparation is now in the possession of Dr. Norris, one of the surgeons of the Pennsylvania Hospital.

† Of that number 9 were cured, 2 died and 2 were discharged at their own request. I am indebted for this and much other statistical information, to the kindness of Dr. G. W. Norris.

It does not, however, appear to have received, of late, in this country, the ample consideration which it certainly deserves. We have, it is true, a number of short papers, most of which, however, are mainly occupied with the account of individual modes of treatment. We have also many valuable reports of cases, but not more at the utmost than two or three essays, claiming to be comprehensive on the subject, have issued from the American press.[*] Nor do our available English sources seem to afford a great deal larger amount of collected information. Although there is much important matter scattered about in various journals and other scientific records of the day, very few monographs on supernumerary joint have been published by British authors. Yet they have made the kindred subject of osseous reparation the theme of many admirable papers.

Probably one of the fullest articles on this form of pseudarthrosis, is to be found in the *last London edition* of Mr. S. Cooper's Dict. of Surgery, an invaluable work, of which it is likely that few copies have yet crossed the ocean. The later and more copious continental writings on this subject are still less accessible to cisatlantic readers. The rich tracts of Troschel, Langenbeck, Oppenheim, A. Bérard, and Seerig,[†] besides the older treatises of Reissesen and Salzman, are scarcely known to us even by reputation. That of Oppenheim alone has reached our shores. We have, however, among recent French articles of some length, that of Sanson in the *Dict. de Méd. et de Chirurg. Prat.* and of Vidal (de Cassis), Velpeau, Chelius and other systematic authors, together, with a crowd of detached reports which may be gathered from the principal periodicals devoted to the science of medicine in France.

Nor have we in our own or foreign publications any tabular statements and comparisons sufficiently detailed and extensive to assist materially the investigation of the causes and treatment of this pathological condition. The summaries of Oppenheim are the most important that I have seen, but they exhibit chiefly, general results, without giving us any of the particulars. No one questions at the present day, the value of statistics of this kind when properly compiled, as among the surest means of approaching to correct and positive conclusions. It is a matter of regret, therefore, that so little use has been made in this way, of the mass of well attested facts which have been long accumulating; and which are yet destined to shed much light upon the still doubtful points relating to this and other affections of the bones.

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[*] The principal American papers are those of Dr. Hewson (on Mechanism of Preternatural Joints, *North American Med. and Surg. Journ.* January, 1828); Wright *American Journ. Med. Sci.* for August, 1828); and Heard (on Ununited Fracture, *New York Med. and Surg. Journ.* for Oct. 1839.) The last is the only recent one; the object of it appears to be to establish the claims of a plan of treatment said to be *peculiar* to the New York Hospital.

[†] *De Pseudarthrosi à Fractura Proficiscente*, 1838, by Professor A. H. Seerig of the Albertine University of Ratisbonne. This thesis is the latest, and probably the best. It is not obtainable in this country; and we have to rely upon the bibliographical notice of it by Troschel, who expresses surprise at the great number of observations collected by the author. (*Med. Zeitung, Encyclographic des Sci. Méd.* tome xxxiii, 2d series, September, 1838.)

A tabular analysis of 113 full and authentic cases has been prepared by Dr. Norris (of this city), who is still adding to it from every source at his command. It bids fair to be the first attempt towards supplying the existing want in this country, while it is a greater effort than seems to have been made by any one abroad. His tables, together with the remarks which it is hoped he will soon present to the public, can not fail to be in the highest degree instructive.*

Meanwhile, the novelty of pseudarthrosis as the subject of a memoir, and especially the intrinsic interest of the graver form of it, have encouraged me, without pretending to offer more than a slight contribution, to devote the remainder of these pages to a brief notice of a portion of the materials within my reach relating to supernumerary joint.

The prevalent belief is, that the humerus suffers in this way oftener than any other bone. This impression is founded on the personal experience of many surgeons, but is not confirmed by the researches, as far as they go, of Dr. Norris. The following is a summary taken from his large table:—Of 113 cases, 37 occurred in the femur; 24 in the leg; 35 in the humerus; 15 in the forearm, and 2 in the jaw.

This, as well as the other summaries of Dr. Norris, does not include the joints which ordinarily follow infra-capsular fractures. S. Cooper gives the fullest list of these. In his words, fractures of the patella, olecranon, condyles of the femur, coronoid process of the ulna, acromion, and the coronoid process of the jaw, are generally united by a ligamentous substance. (*Surg. Dict.* Lond. 1838, art. Fracture.) It is very probable that these fractures, more particularly transverse fractures of the patella and olecranon, are followed by a movable joint between the fragments in a large proportion of cases, but some exceptions have been proved against the rule. Boyer and Desault, and more recently, Earle, Amesbury, Dupuytren and others, do not acknowledge it, and adduce their own success with these fractures in support of their position.

The supernumerary joint is nearly inevitable in the fracture within the capsule of the cervix femoris. No authoritative writer has ever denied the possibility of bony union in this case, but high and numerous authorities positively maintain its extreme improbability. Others have as warmly and elaborately advocated the doctrine that, except in the event of very advanced age, debility or other accidental cause, consolidation ought to be obtained. The discussion of this much agitated question, appears to have resulted in a pretty general admission; that the disputed ossifications *have* taken place, and that under favourable circumstances of youth, robust health, slight displacements, &c., they may be hoped for: but that such consummations are few and far between. MM. Richelot and Chassaignac, in their French translation of Sir A. Cooper's Surgical Works, estimate the proportion of instances of union to those of non-union, as one to *fifty*. S. Cooper tells us that Sir Astley himself now has in his possession a preparation† which he admits to be a genuine specimen of bony union within the capsule.*—(*Surg. Dict.* 1838, art. Fracture.) The joint in the patella, &c., is for an obvious reason, usually attended with moderate inconvenience, especially when care is taken, (with due regard to other indications,) by approximating the disunited surfaces as much as possible, to shorten the connecting medium. The bond of union has sometimes been elongated by a too early use of the limb. An instance of this is described by Dr. Kirkbride. (*Clin. Reports, in Amer. Journ. of Med. Sci., for February*, 1835, p. 32.) Lonsdale also, who has remarked this in the patella, directs the continuance of the splint for a longer period on that account. (On Fractures, p. 438, 1837.) Still even when the separation of the fragments is considerable, the muscles in time accommodate themselves in some degree to the change.

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* We expect to be able to present this paper to our readers before long.—Ed.

† There is said to be another undoubted specimen in the possession of Mr. Adams, Dublin.

Causes.—In entering upon the investigation of the causes of the supernumerary joint, the reader need hardly be reminded that it arises from the protracted disunion of a broken bone; or, in general terms, that it is the effect of whatever interrupts the natural filling up of a breach of continuity in a portion of the osseous tissue. We have, then, to review the circumstances alleged to be opposed to the regular advance of separation in such tissue, if we desire to ascertain any of these causes.

A numerous assemblage of conditions is reputed to be adverse to the union of broken bone. These conditions are mechanical or constitutional in their nature; the latter kind may be general or local.

Under the first head are enumerated motion of the fragments; want of apposition of them; the interposition between the fractured surfaces of foreign bodies, loose pieces of bone, or a portion of the soft parts. We find under the second, advanced age; malignant fever; cachexia from debauchery, &c.; considerable organic disease, phthisis, scurvy, syphilis, cancer, &c.; pregnancy; altered mode of life; insufficient nutrition of the bone; disease of the bone; disorder of the contiguous soft parts;—in short, "diseases and dyscracies of every kind."

These are the principal derangements, and will give some idea of the wide range of general disorders which have been suggested by various authorities, and repeated in the books and schools, as the probable conditions predisposing to supernumerary joint. But the reality of many of them as such, and the relative importance of the few less questionable among them, are by no means conclusively determined.

It is impossible to reconcile without supposing their uncertainty, the discrepant opinions of pathologists respecting them. Some will scarcely admit the existence of the second class; while others are almost as loath to yield any place to the first. We are told by one surgeon that he has repeatedly seen fractures heal without delay under circumstances which are announced by another as decidedly unfavourable to such a termination.

These conflicting statements, even without any more positive testimony, would warrant a strong suspicion that few, if any, of the so called influences can be constant in their deleterious action. Experience has proved the bad consequences of most of them to be as rare as they are variable. "There is no tissue," says a late writer, "in which union takes place more surely than in the osseous tissue, as the whole history of simple fractures clearly shows." (Dr. R. Coates *Am. Journ. Med. Sci.* for Nov. 1834, p. 160.) Few surgeons are there who have not witnessed admirable demonstrations of this truth. Lonsdale is disposed to suspect that the few cases in which union is not completed are the exceptions, not the general rule. In his opinion a very large statistical table illustrating the comparative frequency of union and non-union during the complication of any constitutional disease, is needed to enable us to judge with any confidence of the amount of weight to be attributed to it. (*Op. citat.* p. 84.) Sanson avers, what is probable enough, that none of the causes exert the same energy on different subjects. According to him, their action is null in the majority of cases, and we see fractures uniting quite as well in individuals infirm with age, or affected with syphilis, or scurvy, or in pregnant women, as in young and healthy persons. In a word, we see consolidation going on in despite of the greatest displacement of the fragments and in the most restless and intractable patients. (*Op. citat.* p. 494.)

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* We have seen a specimen of this in the possession of Prof. Mussey, who informed us that he had met with two or three instances of bony union within the capsule of the neck of the thigh bone. We trust he will not further delay his long promised account of these cases.—Ed.

Although the operation of the mechanical causes does not appear to be at all times absolutely incompatible with union, yet inordinate motion and malposition of the fragments have ever been accounted fruitful sources of obstruction to the cure of fracture.

To keep the parts at rest, after the reduction and coaptation of the separated surfaces is always the main object which the practitioner has in view in the management of this like that of every other simple wound. Surgeons of every age have exercised their ingenuity with unbounded zeal in the contrivance of a host of instruments intended to answer this important indication. The injurious disturbance of the fragments which these various kinds of apparatus have been devised to guard against may arise of course from many causes, which, however, it is not our province here to specify. Either the surgeon or the patient, or both together may be at fault; or they may be assailed by untoward complications and other difficulties, which no surgeon or patient, however competent on the one hand and docile on the other, could surmount or avoid.

Frequent motion of the fractured limb is the only cause of imperfect separation mentioned by Celsus. He speaks of fractures that have not consolidated *quia sæpe soluta, sæpe mota sunt.* Duverney, Desault, Boyer, J. Bell, C. Bell, A. Cooper, Dupuytren, Béclard, probably, nearly all the older writers, and most of those of the present age concur in regarding it as the most common cause. Duverney, the predecessor of Desault and Boyer, was particularly urgent and impressive in his admonitions in relation to the moving of a fractured bone. At the present day, in nearly the same sphere of action, Roux, Velpeau, Sanson, and others, are equally positive in giving motion the precedence, in the of category ills by which a fractured bone may suffer. According to Liston, it is only in case of previous disease of the bone that disunion cannot generally be attributed to some carelessness either of the surgeon, or of the patient. (*Elements of Surgery,* page 312.) Seerig, in Germany, affirms, that false joints would be much more rare if fractures were always dressed immediately after their occurrence. (*De Pseudarthrosi a Fractura Proficiscente,* 1838,—*Troschel, Encyclograph. Des. Sc. Méd.* tome 33, 2*me serie,* Sept. 1838.) "In this way only;" remarks Dr. Macfarlane after expressing an opinion similar to Liston's, "can we explain the fact that false joints after fractures are most frequently met with in the humerus, because we know it to hold good as a general rule that diseases and injuries of the upper extremities are more manageable than those of the lower," (*Surg. Report of Glasgow Infirmary, Edin. Med. and Surg. Journ.*, vol. xlvii, 1837.) It might be added perhaps, that in this way can we most plausibly account for the fact, that not a few cures have been obtained of such joints, even several months after the fracture; as well as of retarded union of shorter duration, by the aid of retentive apparatus alone. Witness the reports of Boyer, S. Cooper, Troschel, Velpeau, Amesbury and others.

The fact that the supervention of pseudarthrosis upon fracture is a mishap nearly unknown in the wards of large hospitals, and in the practice, however, extensive, of careful surgeons,* affords still stronger presumptive evidence of the greater frequency of the mechanical impediments to bony union and above all of that of motion.

Out of 44 authentic cases analysed in Dr. Norris's table, 22 were evidently produced by bad treatment. Others might be stated here in addition to his, were it necessary to occupy so much space and time in discussing what seems to be a scarcely mooted point.

Brodie, however, although he does not wish to deny that the motion of the limb can be sufficient to prevent union, is yet somewhat disposed to doubt it, and thinks that in most instances the fault is to be found in the state of the constitution. He has found after trying the experiment upon them again and again, that it was followed by no such consequences in the bones of inferior animals. (*Clin. Lect. on Ununited Fractures, Lond. Med. Gaz.*, vol. xiii, p. 56, 1834.) This does not coincide with the experience of MM. Breschet and Villermé. These gentlemen describe nine supernumerary joints produced inthe bones of dogs; the rudiments of six of them were recognized at the expiration of the 18th day.

"The somewhat injudicious application of dressings, cannot, in my opinion," says Oppenheim, "be considered as a real source of non-union; otherwise, cases of false joint would be much more common than they are."—(*Zeitschrift für die gessammte Medicin*, May, 1837.) In support of this, he adduces the fact, that compound fractures, the treatment of which requires the daily disturbance of the fragments, nevertheless, fail to consolidate no oftener than simple fractures. This argument controverts the dogma of the necessity of *perfect* rest contended for by some surgeons of mechanical celebrity, more forcibly than it does the validity of unrestrained motion as a promoter of pseudarthrosis. For the comparatively slight movement of the limb, unavoidable in dressing the wound, is of the gentlest nature; is made usually at stated periods and intervals of some length; and generally may be dispensed with at the critical period of commencing consolidation, since at that time, the external wound may no longer need so much attention. Oppenheim uses a second argument which is more to the purpose. He states it thus:—Neither can the influence of this cause be well assumed in fractures of the leg or fore-arm when one bone unites and the other remains disunited. These arguments, drawn from experience, against the incompatibility of motion with the regular consolidation of fractures, have doubtless presented themselves to other practitioners; and well deserve attentive consideration. They were promulgated in this city by Dr. Hewson, nine years before the publication of the paper of Oppenheim, from which we have just taken them. (See *N. Amer. Med. and Surg. Journ.*, Jan., 1828.) It is true, that several cases, such as those brought forward above, in which one of two broken bones in the same limb unites, and the other does not, are known to have occurred in America as well as abroad.* It is well known, moreover, that cases occur in persons having every appearance of high health, and who have been treated with unimpeachable skill and judgment. As many as 22 at least of the 113 cases in the analysis of Dr. Norris received the best treatment and presented no symptom whatever of ill health. Ruysch and Van Swieten long ago observed cases of this kind. White (*Cases in Surgery*, p. 85, 1760.), Boyer, (*Op. citat.* vol. iii, p. 82,) and others quote them. S. Cooper speaks of "certain indescribable constitutions, in which bones will not unite again after being broken," and gives two examples. (*Op. citat.*) Sanson avers, that there must be "a peculiar and hidden disposition, or, if you will, a sort of predisposition, which is sometimes so powerful, that it alone suffices to retard considerably the reunion of the fragments, or entirely to prevent them from consolidating." He cites five cases in which it was impossible to discover any appreciable cause; and is inclined to believe that no surgeon of much experience has not seen something of this description.—(*Op. citat.* p. 494.) The pretty well established existence of this unknown cause of itself alone gives ample room for the indulgence of speculation, while it casts a shade of doubt over the more substantial etiology which we would fain believe to be founded on matter of fact.†

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* Liston never met with but one in his own practice, and that was brought on by the "absurd conduct of the patient" in using his broken arm, and removing the splints without consulting his surgeon. (*Elements of Surgery*, p. 331, part iii.) Troschel justly remarks, of the different modes of treatment of simple fracture, that in the practice of wary surgeons whatever be their theory, it is very rare to observe pseudarthroses in important places. (*Encyclograph. des. Sc. Méd.* tome xxxiii, Sept. 1838, from *Med. Zeitung.*)

Mr. Amesbury, although he does not neglect to give some weight to other causes, goes further than most authorities in denouncing the want of rest in fracture, as fatal to the work of reparation. He is disposed in nearly every instance to accuse the apparatus, rather than the constitution, as the root of the mischief. The opinions of one who has seen so much of this kind of disease, would be of much higher value, were it certain that they are not more or less biassed by his predilection for a peculiar theory, his devotion to which is not very well calculated to increase our confidence in his expositions. His statements, therefore, that out of 90 cases of supernumerary joint, only 4 could be attributed to constitutional derangement, we are forced to receive *cum grano salis*.—(See *Amesbury on Fractures*, vol. ii, p. 720, 1832.) We are by no means convinced that the whole 86 cases are to be charged to defective treatment in any but Mr. Amesbury's acceptation of the phrase. One of those cases was attended for the previous fracture by Sir A. Cooper, another by Mr. Green, either of whose names is enough to assure us that in those instances, at all events, no mismanagement existed. Nevertheless, his representations, proper allowance being made, are highly important, but they do not appear to sustain the somewhat ultra doctrine that *absolute* rest and apposition are indispensable to the ready cure of the great majority of fractures. This hypothesis is one which John Bell was at great pains to overthrow, (although then existing only in his own prolific imagination,) when lecturing against the "continued extension" of Desault and Boyer. It is abundantly disproved by the success which these distinguished French surgeons themselves so long enjoyed in the vast field of their triumphs, and is equally confuted by the every day experience in the public and private practice of the last half century on both sides of the Atlantic.

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* A remarkable instance of two distinct fractures in the same bone, one of which healed directly and the other became a joint, is related by Mr. Houston, (Obs. on Fractures, &c., *Dublin Journ. of Med. Sci.* for Jan. 1836.) An old woman, by a fall, fractured her thigh bone. After lying in the hospital for several months, without any apparent suffering, her limb was braced up with adhesive strips, and she was enabled to walk about by the aid of crutches. She did not, however, long survive her convalescence. After death, it was discovered, that in addition to a transverse fracture of the middle of the shaft, a perpendicular one four inches in length, ran up to the trochanter. The transverse lesion exhibited a perfect false joint with fibrous capsule and synovial membrane, whilst the portion detached by the perpendicular fracture had become firmly and universally united to the original bone, in a manner which showed that the union must have been accomplished in a very short period from the receipt of the injury. Mr. Houston gives the foregoing as a singular illustration of his point, in questioning the accuracy of the doctrine, that want of inflammatory action will be attended with a corresponding imperfection in the secretion of callus. In continuing his remarks, he goes on to say, "Here the common explanation will not hold good, as the action was fully competent to the reparation of the lateral fracture, though it failed in the transverse one." Want of proper apposition, and the frequent occurrence of motion between the two main pieces of the bone, he supposes, with good reason, to have been the cause of non-union at this part. It appears to be a forcible and rare illustration of the effect of these mechanical causes.

† The specious cognomens of "a peculiar disposition," "a concealed cachectic vice" &c. &c., afford but a very thin cloak to our real ignorance of the true nature of these pathological phenomena.

According to Lonsdale, not more than 5 or 6 cases of supernumerary joint (except those within a capsule,) have occurred out of nearly 4000 fractures that he saw treated during 10 years at the Middlesex Hospital. In that institution "none of the fractures are treated with the absolute rest which Mr. Amesbury describes as being only attainable by his various kinds of splints." (*Op. citat.* p. 89.) In the Pennsylvania Hospital, where the simplest dressings only are employed, and where Mr. Amesbury's machines never found approval—out of 948 fractures, during ten years, not a single case (excepting always those arising from an infracapsular fracture,) has originated in the wards. As far as can be ascertained, only one genuine pseudarthrosis has followed a fracture treated there in the course of the last 40 years. In that solitary instance, the joint was most probably owing to the mistaken indulgence of the attending surgeon (long since dead,) who yielded to the entreaties and vociferations of the patient, and forbade the application of the extending and retaining apparatus. Hammick, who has seen, according to his own account, as much of fractures as any man living, informs us, that he never discharged from the Plymouth Hospital more than 3 patients with the bones not united. (*Lects. on Fracts., Ampts.,* &c., p. 122, 1830.)

We take leave of the study of the effects of motion on a fracture in stating them as detailed by Mr. Palmer. In his words, "The ossific process is arrested, and a new disposition created for the formation of a bursal structure, similar to what takes place in other parts of the body when friction is employed. It should be observed that constant motion of a fractured bone will inevitably lead to false joint; but this will be differently formed in different cases. If the process of union has been interrupted from the commencement, the broken surfaces will be rounded off and covered with hard enamelled surfaces, enclosed by an adventitious synovial bursa; but if the interruption has taken place during the ossification of the callus, then the extremities of the bone will be united by a cellular or fibro-ligamentous structure." (HUNTER's *Lectures on the Principles of Surgery*, edited by Palmer, vol. i, p. 504.)

Want of apposition of the fragments, is thought by some persons to be a more serious evil than want of rest. The records of surgery contain many proofs that it is by no means constant in its bad effects. In White's first case of resection, (not for pseudarthrosis, but for caries,) in which the head of the humerus was removed, there was a loss of four inches of the whole substance of the bone, yet the limb was shortened but one inch. From the unaltered figure of the arm, its entire usefulness, and its appearance to the eye and touch, the operator, in the plenitude of his satisfaction, though he might "safely say the head, neck and part of the body of the os humeri were actually regenerated."

Gooch narrates a case in which the loss of 5 inches of the tibia was supplied by solid bone; Van Swieten, one of the restoration of 4 inches of the bone, and La Motte another in which 6 inches were replaced; (see White and others.) Heister quotes an instance, about which he himself is a little skeptical, given by Horstius, of the regeneration of "3 fingers breadths of the bone of the foot." Mr. B. Phillips saw the renewal of 5 inches of bone in one case, and of a large portion of the clavicle in another. (*Lectures on Surgery in Lond. Med. Gaz.* for 22d of May, 1840.) Examples of this kind must be familiar to every hospital surgeon. So also must be those where, particularly in compound fractures, union has followed, notwithstanding much displacement and very slight contact of the fragments, even by their sides.

The great difficulty of approximating the fragments in transverse fractures of the patellæ, olecranon, &c., is given by many surgeons as one of the principal causes of their non-union, except by flexible membrane.

Foreign bodies, or pieces of dead bone, either by mechanical interposition, or by irritating the parts into suppuration, may sometimes interfere with the sanatory process in a fracture. The effects of pieces of cloth, bullets, splinters, &c., in keeping up a profuse and long continued flow of pus are well known. Benjamin Bell tells us that he has "met with different cases [of simple fracture] where a cure being considered as impracticable, from no union having formed between the ends of the fractured bones, it was at last accomplished in the course of a very short time by the removal of some of the loose fragments." (*System of Surgery*, Edinburgh, 1788, vol. vi, p. 44.) He also remarks that a considerable accumulation of blood around the seat of fractures is very apt to interfere with the progress of union. More recently Mayo and Lonsdale have observed this effect of copious extravasation of blood, in the Middlesex Hospital. (Lonsdale, *Op. citat.* p. 90.) Foreign bodies may remain in a fracture without giving rise to any bad symptoms, and may be enclosed in the new formed callus. A remarkable instance of this is related in the *Gaz. Méd.* for July, 1838. A piece of iron 35 lines in length and 5 in breadth was found by M. Vogelvanger, after death, and two years after the accident, completely embedded in a deposit of callus in a fractured femur.

A portion of muscular or fibrous tissue interposed between the fragments, has been considered an occasional obstacle to reunion. It was first suspected by White (of Manchester); B. Bell dwelt upon it as a most perplexing accident. Wardrop described it, and suggested an operation for the removal of the intruded membrane. S. Cooper, Sanson, Brodie, and many others, have noticed it in succession. Liston ridiculed the idea of such a difficulty as an "absurd notion." (*Clin. Lect. on Fractures, Lancet*, vol. ii, 1836.) According to Macfarlane, the forcing of lacerated portions of muscle or tendon between the ends of the fractured bone is not at all uncommon; but these, particularly the former, become absorbed by the firm pressure employed to retain the bones in place. "It is different," continues he, "when the bones are not accurately approximated, or when the intervening substance does not yield to the pressure to which it is subjected." (*Loc. citat.*) In many instances of this kind there is so much displacement, that the bones appear to be thrust as much into the muscle as the muscle to be driven between the bones. The case in which Mr. Rowlands operated by resection, may serve as an example of the condition last described by Macfarlane in the above quotation. It was that of a fractured femur, the broken ends of which were so separated by a fleshy substance between them, that it was impossible to bring them together. (*Medico-Chirurg. Trans.* vol. ii, p. 49.) This state of things is familiar to surgeons, as having been not unfrequently met with in operations for the relief of supernumerary joint, and no other instances need be recounted here.

Compression from a too tight bandage, or compression too long continued, is a predisposing cause which has a rather ancient reputation. It is mentioned by Ambrose Paré, (*Workes of that Famous Chirurgion*, Trans. by Thomas Johnston, Lond. 1649, lib. xv, p. 379,) and is the object of a caution which is said to have been handed down from the founder of surgery himself. Tropa long since satisfied himself that it prevented the formation of provisional callus. Within the last three years it has been urged by M. Fleury as a far more frequent cause than was generally imagined, in consequence of the prevailing system of treating fractures by the immovable apparatus. He cites four cases as examples of its influence. (*Archives Générales*, vol. xliv, p. 442, 1837.) According to Sanson, Velpeau and others, it acts by producing a sort of atrophy of the limb, which presents the aspect of what Jules Cloquet has described as *scorbut local.* Brodie thought the want of consolidation due, in the event of too great pressure, to its cutting off the supply of blood from the seat of fracture. Malgaigne attributes the want of union under the same circumstances to the pressure hindering the deposit of the provisional callus. (See Velpeau, *Méd. Opérat.* tome ii, p. 584.)

Constitutional Causes.—It has been already intimated, that there is a great lack of unanimity among writers, respecting the influence which is somewhat vaguely and hypothetically assigned to many of these conditions of the general system.

Supernumerary joints have undoubtedly occurred under circumstances, which analogy would lead us to infer to be exciting causes. But it is equally undeniable that fractures have been repeatedly consolidated under similar circumstances without the slightest difficulty. It cannot be denied then, that our knowledge of the mode of action of these causes, based upon extended observation, is limited to an unsatisfactory degree.

An opinion to this effect is thus stated by Vidal (*de Cassis*) in his *Pathologie externe*, (vol. ii, p. 18, 1839.) "Renewed and accurate observations are required to confirm these data supplied by theory; or, at least, it behooves us to establish more precisely, in what case, and how far, these states of the system contravene the production of callus." Again, "Be it as it may, when we closely scrutinise these questions, and seek in the annals of science the facts on which the authors of these propositions have based them, we are astonished at their rarity, and the little value of the greater part of them. Amesbury, however, firmly persuaded as he is that in the large proportion of joints after fracture, their origin is due to the defects of the ordinary mechanical treatments; nevertheless does not hesitate to say "that the process of union in bone, is influenced by all those causes which affect the healing of the soft parts.* Were we disposed to be satisfied with mere conjectures, the analogy thus hinted at would tend strongly to impress us with the importance of attending to the constitutional causes. Experienced practitioners are not wanting who lay great stress upon the influence of the general health.

The ideas of Brodie and Oppenheim have already been submitted. Hammick suspects that there are many more causes besides motion for a failure of union than are commonly imagined. No one had a better opportunity for forming an opinion from his own experience than this able surgeon long enjoyed in the Plymouth Naval Hospital.

Let us consider separately some of the principal of these derangements of the organism.

1. *Old Age.*—It is easy to conjecture how the altered structure of the tissue and the enfeebled actions of the economy incident to what is styled old age, may preclude the growth of callus. But although the tediousness of the recovery of aged persons, after a fracture is a matter of continual remark; yet, in the absence of sufficient data, we are at a loss to know how much even here to attribute to the physiological dyscrasy alone. Fractures have been known to heal steadily and surely in individuals of both sexes far advanced in years. Some idea of the relation of age to the frequency of supernumerary joint may be formed from another of Dr. Norris's summaries.

Between the ages of 10 and 20 there were	14
Between " " 20 and 30 " "	38
Between " " 30 and 40 " "	16
Above " " 40 " "	18
	86
Of the cases in which no age was stated	27
Total	113

We may also, by a similar course of reasoning, without difficulty, account for the failure of union in a cachectic patient, in one suffering from a debilitating acute or chronic disease—such as dysentery, for example; or, in the last stage of phthisis, cancer, syphilis, &c. One could readily theorise in support of such a belief, but we want many facts to sustain it, and have already in our possession some that are, at least, exceptions to the given rule.

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* "Causes of non-union might be said to be either constitutional, constitutional and local, or purely local. * * The constitutional are fevers, scurvy, &c.; also some organic diseases, as phthisis, dysentery, &c., which occasion great disturbance in the system; likewise constitutional debility, as scrofula, &c., or acquired, as that enfeebled state which is often produced by habitual debauchery." (Amesbury. *Op. citat.*, vol. ii, p. 713.)

Inordinate vascular depletion, long continued fasting, a depraved diet, the withdrawal of an habitual stimulus—All have been seen to impair very decidedly the reparative function. Their injurious operation was much regarded by the older surgeons. Paré in speaking of "those things which retard the generation of a callus," gives a prominent place to the use of "such nourishment as offends in quality, or quantity, or both." (*Op. citat.* p. 379.) J. L. Petit, Heister, Duverney, &c., recommend a more nutritious diet, after inflammation is no longer to be dreaded. They were particular to allow the patient "nutriment solid and proper for his constitution and manner of living." (Duverney, *op. citat.* p. 170.) The propriety of their precautions has been well exemplified by Brodie, and more lately by a writer in the Medico-chirurgical Review, (vol. xxiv, New Series, Jan. 1836,) each of whom cites striking illustrations of the effect of an altered mode of living. A gentleman accustomed to the enjoyments of the table, in order to check and reduce his increasing corpulency subjected himself to a very spare diet. After six months' "starvation" he broke his arm and was seen by Brodie months afterwards with the bone still ununited. A lady by pursuing a similar system of abstinence hoped to effect the same object, and having broken her arm was equally unfortunate. (Brodie, *Op. citat.* p. 57.) The same author further quotes a case, which Wilson used to relate of a dram drinking woman who broke her leg. The bones exhibited no disposition to unite until she was allowed to take her customary drink, when they healed immediately.

Cold Applications.—The continued application of cold dressings to the limb after their indication has ceased was accounted by Dupuytren as not only instrumental in retarding consolidation but even in exciting reabsorption: hence he proscribed all baths and douches during convalescence. His admonitions on this point are repeated by Amesbury and others. Vidal de Cassis] asks for more facts to confirm the accuracy of Dupuytren's opinion. It is an old remark also that fractures heal more slowly when exposed to the cold of winter. Boyer supposed temperature to have some influence but believed it to be very slight. During the rigorous winter of 1830, M. Goyraud collected some facts which accorded with the popular belief. Vidal de Cassis, (*op. citat.* p. 18.)

Paralysis.—Want of innervation from paralysis may render all attempts at effecting consolidation abortive. Mr. B. Phillips relates a well marked case, in which the same accident that fractured a man's thigh injured the lower part of his spine. He lived five weeks, but there was no effort at reparation. (*Op. citat.* p. 327.)

Scurvy.—The baneful effects of scurvy upon fractures, as upon all other wounds, have been demonstrated beyond all doubt. Many of the writers of the middle ages were familiar with its disastrous influence. (See S. Cooper, *Op. citat.*) "Scurvy," says Hammick, "will not only prevent union but dissolve it after it has been formed for many years. In the famous siege of Gibraltar where this disease made great ravages, bones became separated which had been for a length of time united." (*Op. citat.*

p. 118.) Callisen also states that the callus of an old fracture could be thus softened by a scorbutic taint. *A labe scorbutica callum fracturæ diu sanatæ iterum mollescere posse ipsi observabimur.* (*Systema, Chirurg.* tom. i, pars xvii, ord. iv, p. 733, 1798.) The reader will remember the oft quoted history of Lord Anson's Voyage which describes old fractures as giving way, and the scars of old wounds or ulcers as breaking out anew in many of the sailors who were prostrated by this horrible disease.

"In the early part of the French war," we quote Hammick once more, (p. 118,) "about the years 1793–4–5, we received a great number of the worst cases of scurvy—at least six hundred; and although I never recollect an instance of its having dissolved the union of a fractured bone which had attained to any degree of firmness, yet it entirely prevented it from taking place whilst the patient was labouring under any scorbutic diathesis. Bad diet, and foul air from confinement in ill-ventilated dark rooms, or underground cellars, will prevent union." This author had an opportunity of observing the latter at a time when the hospital was extremely crowded.

Cancer has long had the reputation of being unfavourable to the firm reunion of bone. S. Cooper attended cases in which the cancerous diathesis appeared to be the deleterious agent. He quotes Leveillé (*Nouvelle Doct. Chirurg.* tome ii, p. 159) as having watched them in l'Hotel Dieu, also Sir Astley Cooper, as having met with instances in his practice. There are examples on record, however, of success in the treatment of fracture even in advanced stages of cancer. Mr. Brodie treated an old woman who was "dying with cancer," and who, in turning one day in bed, broke her femur. Contrary to his expectation, the fragments united perfectly well. Mr. B. had the care of a lady who had cancer of the breast, and pains in the limbs, indicating cancerous diathesis of the bones. The clavicle which was affected with scirrhus, was accidentally broken by the motion of her arm, but it united as readily as a healthy bone.

Liston gives a well marked case of unexpected success of this kind. A female ætat. 49, fractured her humerus by slight muscular exertion. She had long laboured under some affection of the spine which confined her to bed. She presented also a well developed carcinomatous tumour of one mamma, the axillary glands being involved. The other mamma was in progress towards the same condition, and a schirrous tumour had made its appearance behind the angle of the jaw. Her surgical attendants were fearful that the fracture had arisen from the malignant degeneration of the medullary canal of the bone, which occasionally takes place in a system thoroughly pervaded with the carcinomatous diathesis. They were agreeably surprised, however, to find the healing of the fracture going on just as well as under ordinary circumstances. (Liston, *Clin. Lect. on Fracts.* Lancet, April 30th, 1836, p. 163.)

Syphilis.—Oppenheim totally discards the suspicion that syphilis retards the union of fractures. He cites various cases from his own experience, in which the constitutional disorder made not the slightest impression on the fracture, and quotes Lagneau (*Exposé des Sympt. de la Malad. Ven.* Paris, 1818,) and Berard (*Des Causes qui empechent ou retard la Consol. des Fracts. &c.*, Paris, 1823,) to the same purpose. He is strongly inclined to ascribe the failure to the remedy employed rather than to the disease. (*Op. citat.*) Sanson has had the care of two decided cases, which soon gave way to appropriate treatment; (*Op. citat.* p. 492.) Hammick speaks of some fractures which he cured by the aid of mercury; and thinks that this may often be indicated where union advances slowly, and a venereal diathesis is to be suspected. (*Op. citat.* p. 117.) Vidal de Cassis believes that syphilis can rarely derange the formation of callus.

Pregnancy and Lactation.—The same, according to this author, may be said of *pregnancy*, which, together with *lactation*, is regarded by many pathologists as sufficient to check reparation. Leveillé, Boyer, Delpech, Dupuytren, S. Cooper, Liston and many others, have met with fractures that were not prevented from consolidating in the usual time by the co-existence of the gravid uterus. Dupuytren has seen a fracture heal readily in a pregnant woman, who, at the same time, was afflicted with cancer. On the other hand, Hildanus relates two cases of supernumerary joint produced in pregnant women. (*Obs. Chirurg. Cent.* v, obs. 87.) Alanson (*Med. Obs. and Inq.* v. iv, No. 37,) reports one, Hammick three, and Amesbury two. Wilson mentions two that he met with, but speaks of others, in which this state of things made no difficulty further than perhaps a short delay. (*On the Human Skeleton*, p. 214.) Hammick would not be understood to attribute any direct action to the state of pregnancy, but surmises that it may be due to the debility which gestation sometimes produces. This appears to be the idea of Amesbury in relation to his two cases. Liston, after observing that he had often seen pregnancy to have not the slightest effect, goes on to say, "Profuse uterine or vaginal discharges, or determination to particular parts or organs, will certainly retard union." (*Elements of Surgery*, p. 460.)

Local disorder.—"According to Langenbeck," says Sanson, "a fever, an erysipelas, causes which must be regarded as the least active, have sufficed to soften callus already far advanced." The experience of others accords with this: Wardrop met with two cases of this kind, which he details in his paper in the *Medico-Chirurgical Transactions*, (vol. v;) Malgaigne, (*Lancette Française*, tome iii, p. 218,) and Vidal de Cassis, each reports a case. Dr. Kirkbride published the notes of two that came under his eye at the Pennsylvania Hospital. In the first of Dr. K.'s cases, the patient returned with an ulcer over the part, to the hospital, whence he had been discharged cured of the fracture one month before. About three weeks after his return the ulcer commenced sloughing without any assignable cause, and before this could be subdued, the recent callus was absorbed. Caustic was applied to the bone; within three months and a few days, the ulcer was cicatrized, and the bone firm. (*Amer. Journ. of Med. Sci.* for Feb. 1835.

Free suppuration has repeatedly proved a serious obstacle to the regenerating process. The detrimental influence of a constant flow of pus around the seat of fracture is dwelt upon by Pott, J. Bell, S. Cooper and others as very great. Their views are verified by the experience of every hospital surgeon.

Disease of the bone.—If disease of the parts in the vicinity of the fracture may sometimes exert so unhappy an effect, disease of the bone itself must be a still greater misfortune. This is generally the fact, as the annals of surgery fully show. Heister appears to be the first among modern authors who attached much importance to it. He quotes a case from J. L. Petit, and gives the particulars of one that presented itself in his own practice. A student of medicine, about 20 years of age, was for several years troubled with an ulcer and caries of the inner and middle part of the femur, near the course of the femoral artery. Unluckily, he broke his thigh at the point of caries. Heister was unwilling to dilate the sinus and cauterize the ends of the bone for fear of injuring the artery. The fracture never healed, and the young man dragged a miserable life. (*Gen. Syst. of Surg.* 7th ed. of Eng. Trans. 1763, p. 128.) This and Petit's also, which was cured, was a case of previous disease of long standing. But examples could be multiplied of recent diseases of the bone which have produced supernumerary joint, and have resisted all treatment but that of removal of the affected surfaces. The most remarkable case of disease of the bone was that reported by Marx and Paillard, where a mass of hydatids appeared in the seat of fracture and effectually prevented the reunion of the bones until it was discovered and removed by Dupuytren, in whose wards the case occurred. (*Journal Hebdomad*, 1833, t. xii, p. 97.(

Even in the event of disease of the bones, however, the rule, to use the expression of Brodie, is not absolute. This surgeon had a patient who suffered from the disease of bones, on some of which there were nodes. The clavicle which was the most enlarged and much diseased besides, was broken in the diseased part. To his surprise, it united without the slightest difficulty. Mr. Houston gives an instance, stated to him by Professor Kirby, of "a middle aged man in whom almost every long bone of his body had been broken at one time or another from trifling causes, but notwithstanding what might be called in this case great weakness of the system, all these accidents were repaired with very little suffering, and in a moderately short space of time. (*Dublin Journ.* Jan. 1836, p. 494.) Such examples are not extremely rare. Some very interesting ones are detailed by Professor Gibson. (*Outlines of the Instit. and Pract. of Surgery.*)

Unequal nutrition of the fragments depending on the distribution of the nutritious artery is a local condition of a physiological nature lessening the chances of reunion which has of late years met with much attention from pathologists. The limited supply of blood which the head of the femur necessarily receives when detached from the shaft by fracture within the capsule is regarded by Sir A. Cooper, Boyer and others, as one of the chief difficulties in the way of consolidation of the neck of that bone. This feeble vascularity added to the want of rest and apposition of the fragments is, in their opinion, sufficient to ensure a supernumerary joint in nearly every case, independently of the "senile atrophy" that is often present in that part. Earle, Amesbury, Dupuytren, and their respective partisans deny this, and attempt to prove that the causes of the joint after such fractures are purely mechanical and may be counteracted. There is, however, in operation here, another physiological cause somewhat analogous, and alike negative in its character, which was first explained and insisted on by John Bell, and since his time, by Brodie, Syme, Mayo, Lonsdale and others. It is the absence of the bed of vascular soft parts—cellular tissue in other words, in which most of the supplementary callus is elaborated, as it were,—and which is now considered of material importance to the speedy cure of all fractures. To the want of this is at the present day attributed the slow growth and indeed the frequent absence of callus in fractures of the cranium, as well as the liability to false joint in all infra-capsular fractures.

The derangement of the circulation of a limb by the deligation of its main artery is reputed to be sufficient to interrupt consolidation. According to B. Phillips, this, like every other asseveration of the kind is supported by a few cases.

M. Vidal de Cassis, (*Op. citat.* vol. II, p. 64,) gives an account of some curious researches recently undertaken by M. A. Berard, and followed up by M. Gueretin. They show that the epiphysis of a growing bone, towards which the nutritious artery of that bone directs its course, is consolidated with its shaft sooner than the epiphysis which belongs to the opposite extremity of the same shaft. For instance, this fusion of the condyles of the humerus with the lower extremity of the corresponding shaft advances more rapidly than that of the head of the humerus with its upper extremity, because the nutritious vessel runs from above downwards. Vidal informs us, that M. Gueretin has further discovered a similar relation between the direction of the nutritious canal, and the position of supernumerary-joints. The former gentleman has thought it worth while to construct and publish a table of M. Gueretin's results. We subjoin them here as possessing even now more than the interest of novelty, while an extended investigation may prove them to be of great importance in enabling us to solve the question of the obscurer causes of the malady which now occupies our attention.

In the humerus, the nutritious canal courses from the middle of the shaft *downwards*—out of 13 cases in this bone, 9 were found *above* the nutritious foramen and 4 below. In the fore-arm the artery runs from below the middle of the bones *upwards:* 7 cases out of 8 presented *below* the canals in these bones. The nutritious artery in the femur is directed *upwards* from the middle of the shaft: here 5 joints occurred *below* the canal and 3 above. In the leg, the canals have a direction *downwards:* 4 joints were seated *above* the canals in the leg, and 2 below them. These researches will remind the reader of the interesting paper of Mr. Blizzard Curling, on the atrophy of bone, wherein he published his discovery of the effect of the accidental obliteration of the nutritious artery after fracture, in producing temporary atrophy of the impoverished fragment. (*Medico-Chirurg. Trans.* 1837, vol. xx.) The question naturally suggests itself, whether this accident might not sometimes favour even the formation of a supernumerary joint.

In conclusion of this detailed, and it is feared, tedious investigation, we cannot help feeling, to some extent, the discouraging apprehension expressed on a similar occasion by a far more experienced and able writer, that "this review, however humiliating the reflection, is not calculated to afford any one precise information respecting the object of our inquiry."* Our end will be answered, however, if we have placed once more plainly before the profession, in a collected form, the principal conditions which may possibly give rise to the infirmity in question; and especially, if the readers of these pages who have paid little attention to the subject, shall be prepared not only to meet and avert them, but to watch closely their real operation, and report the results of such observations.

Anatomical characters.—We do not propose to enter at this place *in extenso* on the consideration of the anatomical characters, and the diagnosis and prognosis of the disorder under investigation. Suffice it to say, with regard to the anatomical varieties, that they are complex and numerous, as a matter of course, since they depend upon a primary lesion, which is itself the result of accident; and that they are arranged under two principal types.

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* Hewson. (*Op. citat.*)

The commonest of these is the *amphiarthrodial*, in which the fragments are directly connected through the medium of condensed cellular membrane, devoid of osseous matter. The second is said to be *diarthrodial* in character, although some writers still contend, with Boyer, that it presents nothing in organisation analogous to that of a genuine ball and socket joint. We are disposed to hazard the conviction that this difference of opinion might be shown to be more imaginary than real, as in fact verbal merely, and turning upon the logical meaning of the word joint. Certain it is, that many instances are on record, and specimens preserved, in which a sort of "bursal structure" had been formed. The articulated fragments may be unconnected except by a more or less complete, and sometimes decidedly fibrous capsule, which is attached by an irregular margin to their periphery above and below the respective ends; these ends may be rounded off and cicatrized into compact and smooth surfaces; they may be adapted to each other by concave and convex surfaces; or, it is stated, these surfaces may be encrusted by a sort of thin, pseudo-chondroid membrane; lastly, the ends are known to be sometimes lubricated by a fluid resembling synovia; and are said to be furnished with a synovial membrane. Such an arrangement of parts would seem, at any rate, to constitute an articulation, whether or not it possess any exact feature (besides the mobility and discontinuity) in common with the natural organs to which Boyer, (*Op. citat.*) Hewson, (*Loc. citat.*) Syme, (*Prin. of Surg.* part i, p. 245,) and more recently Chelius of Germany, (*Traité de Chirurg.* par M. J. Chelius, Trans. by J. B. Pigné, 1832,) have denied it a resemblance. The limits of this memoir, already somewhat transgressed, preclude our offering any observations in relation to the diagnosis and prognosis of supernumerary joint, even by way of illustration and introduction to the treatment.

Treatment.—In general terms, the object of the treatment of supernumerary joint must be, first, to counteract or remove the cause of the evil, should it still persist; secondly, to excite such an action in the part at fault as may lead to anchylosis of the joint, that is to say, to consolidation of the long disunited fragments. The removal of the cause, (releasing the limb, for instance, from the injurious confinement of a too tight dressing,) is sometimes, especially in the earlier or forming stage of the affection, enough alone to procure this consolidation. The eradication of a constitutional disorder; the invigorating influence of an improved diet and other tonic regimen, together always with the repose, (never to be left unsought for as soon as the requisite action is once started,) which is secured by the skilful employment of an efficient fracture apparatus; or finally, this repose, thus obtained, alone, has frequently sufficed without any other remedy.

A simple course of this kind was often pursued with happy results by Boyer. He confined himself, in many cases, to maintaining the parts quietly *in situ;* occasionally recommending a nourishing diet, and perhaps a mild tonic course of medicine. The following account is selected and condensed from those of five cases, which this surgeon gives as a few out of many, that he treated with success in this manner. A young man, ætat. 19 or 20, enjoying good health, but thrown into a state of despair by having gambled away a large sum of money entrusted to him, jumped from the bridge of the Tuilleries into the river. He fell upon a raft, and broke his right thigh obliquely in the middle. The fracture was treated in the usual manner in the hospital La Charité. At the end of four months, the fragments, which had overlapped considerably, were still very movable. A number of operations were proposed for the relief of the man; but no plan was agreed upon till M. Boyer undertook the treatment. The limb was kept in a state of continual extension by the ordinary bandages, which were carefully tightened every day. In three months, that is to say, seven months after the accident, the fracture was firmly united. (*Malad. Chirurg.* t. iii, p. 98.) Velpeau speaks in the highest terms of an analogous, but perhaps more perfect treatment, by the aid of the immovable apparatus. A very extensive employment of this apparatus has convinced him that it will enable us to cure the greater number of false joints without any other operation, and in support of his views, he cites the practice of Larrey, Berard, Jr., Macdowel, Thierry, &c. M. Thierry cured, with the starch bandage, in two months, a pseudarthrosis of this kind that had existed for one year. Among other facts which Velpeau communicates from his own experience, we find the following. Mde. B. suffered a fracture of the humerus. Thirty months afterwards it was still flexible, notwithstanding the care of many distinguished surgeons of the capital, and the employment of all sorts of bandages. The dextrine was applied and left unchanged for two months; at the end of that time, to the great surprise of the patient, the removal of the dressings exhibited the bone in a state of consolidation. The same happened in a supernumerary joint of the femur, of ten months standing. (Velpeau, *Méd. Operat.* 1839, tome ii, p. 585.) Instances of similar good effects, from the use of the retentive apparatus of Baillif, are related by Troschel in Germany. With the immovable apparatus properly applied, says Velpeau, we can hope then to cure all pseudarthroses that are not maintained by a want of energy, a general disease, or a degeneration of the fragments; and all that are owing to the defect of sufficient contentive means.

But in the more formidable cases, although the original cause of the mischief may have disappeared, reparative action has entirely ceased; the parts exhibit no disposition to unite, and rather seek to adapt themselves to their new condition and relations. This state of things calls for a more energetic treatment than the passive method we have just described. A decided impression must be made in order to arouse the dormant regenerative forces of the implicated tissues. The excitement of a reproductive action, whether it be inflammatory in itself or not, is the leading indication.

Although there are many modes of attempting to answer this indication, yet they are all more or less uncertain, and frequently tedious and painful. Some of them subject the patient to great and protracted suffering, and may even place his life in jeopardy. The views of surgeons on the treatment as upon the etiology of this perplexing malady, are far from being firmly settled. Certain it is, that although none of the numerous and diversified methods of treatment recommended by different authorities, has been entirely discarded, yet there is scarcely any that has not at times, however faithfully pursued, greatly disappointed the practitioner. The multiplicity and varied character of these plans, together with their occasional failure and occasional success, would appear to be sufficient, without recurring to the history of the causes, and of the various forms of the disease, to show that no remedy yet devised can be expected to answer the indications with uniform success in every case, or even in the majority of cases.

Oppenheim, in expressing sentiments to this effect, avers that an appropriate remedial measure, adapted to all the various forms of this injury, still ranks among the *desiderata chirurgiæ*. In the absence of such a measure, of course it becomes important, by more extended observation, to determine, with precision, by what circumstances as a general rule, the principal remedies are especially indicated.

These remedies are general and local. The first include regulated diet, tonics, alteratives, &c. They need not occupy our attention at any length since their administration must be governed by certain well known general principles. "According to the variety of causes, medicines shall be applied," are the words of Ambrose Paré in relation to this subject. They express a truism that requires no amplification.

As instances of the occasional service of constitutional means, even in patients of apparently good health, we have cases recorded in which the exhibition of mercury in small doses, combined with the usual mechanical treatment, has been marked by favourable results, after other measures had been essayed in vain. Salivation, however unnatural it may seem as a remedy for imperfect separation of bone, nevertheless, was practised with success, at least ten years ago, by Mr. Hammick. A marine with a fracture of the leg of several months duration, came under his charge. Having accidentally discovered that the man had been suffering less than 12 months before under severe syphilitic symptoms, he put him upon a course of mercury; and before ptyalism went off, the leg had firmly united. After cautioning his pupils against the indiscriminate use of this medicine, except in cases of venereal disease, lest it retard union by the debility it produces, he goes on to say—yet mercury will frequently be required by patients who have never had any syphilitic taint, not only as an alterative, but even pushed to a considerable extent before union of a fractured bone takes place. He then refers to a case of a marine with a fracture of the leg 17 weeks old, and still ununited. The man appeared to be in perfect health, and never had had any venereal infection. Camphorated mercurial ointment was locally applied until salivation was induced, when the callus speedily formed. So common is this treatment, according to him, that he does not think it worth while to dwell upon it. (*Op. citat.* p. 118.)

An interesting case of this kind, (in which, however, the treatment was complicated by the use of pressure, effected by a well-padded leather girth firmly applied around the seat of fracture,) is reported by Bransby Cooper. Mr. Cooper administered the mercury at the suggestion of Mr. Colles of Dublin, who had been struck with its effects in the Dublin Hospital. It was a fracture of the humerus near its middle, of six months standing, in a healthy female 28 years of age. Friction, the immovable apparatus, and the seton had severally been tried and failed. Hydrarg. cum Calc. Carb. gr. iv, ter die, was prescribed, and the leather girth directed to be worn. Salivation was produced; and when at the end of a month, they removed the girth, the bone was found to be perfectly united. (*Guy's Hosp. Reports* for 1837, p. 400.)

Dr. Hays has favoured me with the outlines of an interesting case in which constitutional treatment, combined with pressure and rest, effected a cure. Eliza Able, ætat. 26, entered Wills Hospital for the Lame and Blind, September 7th, with a fracture of the humerus of six months' standing. Friction had been employed without effect. Dr. Littell, under whose care as the then attending surgeon, she for a short time remained, produced an eschar three inches long by one wide with the potash on the arm over the seat of injury. The cauterised surface became a troublesome sore which required considerable attention, and occupied some time in cicatrizing. No material change in the relation of the bones was manifested. When she came under Dr. Hays's charge, on the first of October, he found that she was labouring under considerable constitutional derangement with disorder of the menstrual function—this discharge being irregular, and when present accompanied with severe pain, (dysmenorrhœa.) She also had leucorrhœa. He treated her for these complaints; and among other internal remedies, administered first iodine, and afterwards carbonate of iron in combination with quinine. At the same time, pressure and rest were maintained, the limb being dressed with an angular splint reaching from the axilla to the finger ends. The girl was discharged perfectly cured on the 31st of December following.

The *local remedies* are medicinal, medicinal and mechanical, or solely mechanical. They consist in, Irritating applications to the tegumentary surface in the vicinity of the joint, such as rubefacient liniments, tinct. iodine, lotion, douches, blisters, and escharotics. Irritating injections thrown into the cavity of the joint. Shocks of electricity passed through the seat of disease. Friction of the separated surfaces against each other; friction and pressure with exercise, constant pressure and rest. Exposure of the joint and irritation of the articulating surfaces and surrounding parts. Irritation of the joint with slight exposure by means of a long sharp-pointed instrument passed obliquely through the flesh down to the ends of the fragment. Introduction of artificial heat into the joint by means of a rod previously held in boiling water; cautery, actual and potential to the articulating surfaces; rasping of these surfaces; resection of the ends; resection of the ends, and binding together the fragments with a silver wire; lastly, the seton and its modifications.

All of these have been tried singly; and some in combination with each other, and with general remedies. Each with, perhaps, one or two exceptions, has its advocates who place it first on their list and point to their success with it in support of its claims.

External irritation has long been familiar to surgeons as the means of at least accelerating the deposit of callus. Paré recommended gentle frictions and fomentations with warm water, irritating plasters and "other things which customarily are used to members troubled with an atrophia." (*Loc. citat.*) He is very particular in directing the suspension of these when the parts begin to "grow hot and swell" lest they produce the opposite effect from that intended.

Heister also advises us to rub the limb well with hot cloths, spirituous medicine, aromatic lotions, &c., &c. Duverny tells us, that induration may be assisted by lotions of aromatic wines, and by the application of compresses moistened in them and retained by a bandage.

The Iodine lotion is of more recent date. It was proposed and successfully employed in the form of tincture, by Buchannan. Mr. B.'s first case, was that of an oblique fracture of the bones of the leg, of 46 weeks standing, in a young man of excellent health and strong constitution. There was much displacement and overlapping of the fragments. After six months ineffectual trial of pressure and exercise of the limb, as recommended by J. Hunter, according to Sir E. Home, he proposed resection, but being overruled, finally determined to try the tincture of iodine. At this period, says the author, it was with the greatest difficulty and extreme pain that the patient could drag himself along with a staff. The limb was considerably swelled particularly below the fracture; and if when attempting to drag himself along he touched a stone or the least elevation in the path on which he was walking he was put to the most excruciating torture. The limb was shortened two inches and could be rotated to 8 inches at point of fracture. April 16th. Applied tinct. to the limb particularly about fracture and parts around the ankle, and in three days the pain and swelling were removed. Patient took decoct. dulcam. ℥ii. t. d., which, by the bye, he had been taking from the outset. Continued tinct. every morning until May, and then applied it only every second day. Parts became stimulated and deposited osseous substance; union took place, and in the month of August following he was dismissed cured, with the limb apparently stronger than before the accident. The author adds in a note that the patient walked, (supported by a staff,) to his surgery every time the medicine was applied, so that part of Hunterian method as he calls it, was employed in conjunction with his own. (*On a new mode of Treatment for Dis. of Joints and the non-union of Fractures*, Lond. 1828.) The tinct. of iodine has been tried with benefit, by Willoughby in America, (*Trans. of Med. Soc. of St. of New York*, vol. i, 1834,) and Trusen in Germany. (*Med. Zeitung*, 1834.—See Oppenheim.)

The mineral water douche to the limb around the joint was proposed by Rognetta (*Archiv. Gén.* 1834, vol. xxxv): he ranks it with vesication and cautery. It was suggested to him by the account of Monteggia, (*Instituzioni Chirurg.* 1816, vol. v, p. 194,) of the experiments and observations upon the Springs of the Vardieri, of John Fantoni, an Italian Physician, who ascertained that the effect, upon animal matter, of these waters, when falling from a height, was much more penetrative and forcible than that of water of the same temperature in form of still bath. The spout baths of the Hot Springs, Va. U. S., which have long been noted for the relief of many chronic disorders, might be beneficial in this way. The waters of Barege and one or two others on the continent of Europe have the reputation of sometimes exciting the absorption of callus. Dr. Blutzke of Schwetz has lately shown, that the daily application for half an hour or an hour at a time of simple cold water descending upon the part from the height of six feet in a strong unbroken stream, is remarkably efficacious in the cure of old atonic ulcers of the feet; and even in herpetic ulcers and scrofulous caries of the lower extremities, one half the patients were cured by this douche. (*Amer. Journ. Med. Sci.*, Aug. 1840, p. 480, from *Med. Zeitung.*) Repeated vesication of the limb near the diseased part was proposed by Mr. Walker of Oxford in 1815, (*Lond. Med. and Phys. Journ.*, vol. xxxii, 1815,) and has since become a common and useful remedy in the tractable cases. It is said to have been resorted to for many years by veterinary surgeons in the management of analogous lesions of the bones of inferior animals. It was well esteemed as a moderately active and often very valuable therapeutic aid by Wardrop, Brodie, and others.

Escharotics externally applied in the region of the joint were introduced by Dr. Jos. Hartshorne of this city. (*Eclectic Repertory*, 1812, vol. iii.) He used the caustic potash for the first time in 1805. He rubbed it on the integuments near the seat of injury so as to produce a small superficial eschar with moderate inflammation; and by this means to excite the neighbouring parts. The case was that of a fracture of the external condyle of the femur, of four months' continuance. The man recovered the use of his limb in 20 days after the issue was created, although no previous treatment seemed to have had any effect. The second instance reported was a supplementary joint of the humerus five months after fracture, treated in the year 1811, for which pressure was used together with the alkali. In 1838 he was consulted in another case of supernumerary joint of the femur which was cured at his recommendation with the caustic and by pressure.

Possibly the moxa might be advantageously used in some cases where the bones are superficial.

The actual cautery has been found to hasten consolidation. Dr. Kirkbride tells us that it was applied with good effect to a fractured femur in the Pennsylvania Hospital. (*Amer. Journ. Med. Sci.* for Nov. 1835.)

External cautery appears to have been beneficial in relieving the patient of his infirmity when in such a situation as to render the prognosis as to ultimate recovery quite discouraging. Its success upon the femur and humerus—large bones deeply embedded in the soft parts, and therefore distant from the surface, would seem to show that it is superior in efficacy to vesication and other superficial applications, all of which are generally supposed to be inadequate, except where the bones are near the surface, and when the process of reparation has rather flagged than entirely ceased, or given way to another action. It has, moreover, the advantage of being available when, as in the case of jointed condyle, an operation would be contra-indicated by the proximity of a natural articulation or a large nerve or artery. Velpeau considers it like the rest of its class only adapted to the unconfirmed stage of the malady, and not sufficiently prompt and energetic in its operation to alter the disposition of the parts. (*Loc. citat.*)

Stimulating injections were proposed by Dr. Hulse of the U. S. Navy, (*Amer, Journ.* for Feb. 1834,) in supernumerary joints complicated with a fistulous opening. He effected a cure in two months of a case of this kind, in which port wine and water, salt and water, and a solution of sulphate of copper were successively employed. A solution of iodine is recommended by Dr. Norris as probably the best injection for this purpose.

Electricity was adopted by Mr. Birch, one of the surgeons of St. Thomas's Hospital, in whose hands it was eminently beneficial. He informed Dr. Stevens of New York, on whose authority these statements are made, that it had never failed with him. "One of his dressers, with whom I was intimately acquainted," says Dr. Stevens, "saw two cases in which it produced the most happy effect." "One of these patients," continues Dr. S., "whom I afterwards visited during his illness, entered St. Thomas's Hospital, in the month of January, 1812, with an unconsolidated fracture of the tibia, below the middle, of 13 months' standing. The leg below the fracture could be easily moved in any direction, and without exciting much pain. Shocks of electric fluid were daily passed through the space between the ends of the bones both in direction of the length of the limb and that of its thickness. The man being somewhat weak used bark and porter at the same time. The leg was retained in the ordinary fracture dressing. Improvement was very perceptible in two weeks, and in six weeks he left the hospital cured." (Append. to *Trans. of Boyer*, note A.)

The remedial measures that we have just described, together with friction and pressure, (with either or both of which they may be sometimes advantageously associated,) form a class of themselves, some of which, according to his own views, the surgeon first tries in his efforts to bring about the union of an indolent or chronic fracture, before he makes up his mind to resort to more formidable expedients. Accident may induce what these latter are designed to effect. Seerig relates a case, in which the patient who had refused all treatment, was attacked unaccountably with an erysipelas of the limb; this soon produced the restoration of its bony continuity. Erysipelas has been observed, in the Pennsylvania Hospital, to operate in a similar manner, (Kirkbride, *Amer. Journ. Med. Sci.* for Nov. 1835.) Wardrop tells us of a sailor in whom a fracture of the humerus evinced no disposition to unite until three weeks after the injury, when he happened to fall and severely bruise the limb; after which, union rapidly advanced. (*Medico-Chirurg. Trans.* vol. v, 1814.) Amesbury reports an analogous incident. A gentleman had a fractured thigh in which no union could be established: several months after his mishap he was thrown out of his gig, and the wheel passed over the limb at the fractured part. He was confined after the second accident, which was followed by high inflammation; and now the fractured bone united. (Amesbury, *Op. citat.*) Meeker narrates an interesting case, the following sketch of which is condensed from his account. A lady fractured the radius of her right arm. Through the inattention of her physician, who did not suspect a fracture, a supernumerary joint was allowed to form, which rendered the use of the limb difficult and painful, unless it was supported by a roller. Nearly four months after the reception of the injury, she unexpectedly met with an intimate friend, and forgetting herself, in the joy of the moment, she gave him her right hand; the cordial shake which it received, produced such excruciating pain from the friction of the two ends of the bone, at the point of separation, as to cause an involuntary scream. The arm remained sore, and in a few days, slight lancinating pains were felt in the part, which continued for some time. At the end of three or four weeks, she was astonished to find the roller no longer necessary, the bone having firmly and securely united. (*N. Y. Physico-Med. Trans.*, vol. v, 1817.)

This is in fact the history of a case treated purely by the use of friction; of the operation of which it is a striking illustration. Forcible and, if need be, repeated attrition of the articulating ends of the fragments, until inflammation sets in, is the most simple and, excepting pressure, the safest of the strictly chirurgical remedies for supernumerary joint. It was recommended by Celsus, (lib. viii, cap. x,) and is the oldest among them. It does not appear to have been much thought of, until Mr. White, of Manchester, recalled the attention of the profession to it, and urged its merits. Duverney, early in the last century, spoke of it as recommended, but considered it, to use his words, "only good in the study, for, however the whole end of the cemented bone be rubbed, it is useless and even dangerous for the patient." (*Op. citat.* p. 176.) Friction was stigmatized also by Boyer as extremely improper, where the consolidation was not definitely suspended; because it retards the process of nature by breaking up the callus already deposited; and as futile in a confirmed supernumerary joint, while it leads to serious accidents by tearing the adjacent soft parts. (*Op. citat.*, tome iii, p. 106.) These theoretical objections have not been sustained by later observations. We know of no instance in which serious consequences have resulted from the employment even of some violence in rubbing the bones upon one another. Boyer's strictures are chiefly levelled against what would be manifestly an abuse of the remedy. It would certainly be wrong to continue the repetition of the friction after a decided irritation was produced; or to omit to enforce the most perfect quietude immediately and for some time after the symptoms of high action had appeared.

The case of Dr. I. Parrish, and those of Dr. Kirkbride reported in Nos. xxviii and xxx of the *Amer. Journ. of Med. Sci.*, are well marked instances of its successful employment. Sanson brought about consolidation in a femur obliquely fractured and much shortened, that had remained ununited for more than a year, merely by the friction incident to the reduction of the fragments which overlapped each other five or six inches. (*Dict. de Méd. et de Chir. Prat.*) Derricagaix cured in 40 days a supernumerary joint of the leg of six months duration, by violent friction of the surfaces. (*Recueil Périodique de la Soc. Méd.*, tome ix, p. 314.) Steinheim relates a cure of a similar joint of the femur by the same means. (*Med. Zeitung*. Oct. 1834.)

White, of Manchester, firmly enclosed the thigh in a leather girth adapted to the whole limb from the patella to the groin, and then directed the patient to make some use of the limb in moving about. He thus combined pressure with exercise of the limb, and with great friction. The patient thus treated was ultimately relieved, but not without much trouble, on account of an abscess that formed in the joint, and prostrated him to an alarming degree. (*Op. citat.*, p. 76.) This method was recommended by John Hunter and Sir E. Home. (Brodie, *Op. citat.*, p. 57.) Inglis adopted it with advantage in 1805. (*Edin. Med. and Surg. Journ.* vol. i.) This gentleman made considerable pressure by means of a roller and a tin plate. Brodie has known the best results to follow, where patients who have been confined to their beds for 10 weeks or more, without consolidation of their fractures, have been permitted to hobble about on crutches, and subject the maimed limb to the weight of the body after having had it protected with a sustaining apparatus. According to Oppenheim, (*Op. citat.*,) Professor Kluge, of Berlin, allowed his patients to use a limb, if it remained flexible after the lapse of the period usually occupied in restoration; and in the event of inflammation remanded the individual to his quiescent state. In every instance, a quick and firm consolidation resulted without suppuration. Malgaigne tells us that Boyer, and also Briot, in France derived full success in several cases, from this mode of treatment. (*Méd. Opérat.*, p. 248.) Velpeau states that he has often resorted to it, and quotes MM. Champion and Jacquier d'Ervy in its behalf. (*Op. citat.*, tome ii, p. 583.) "It is generally thought," says Sanson, in reference to friction, (whether simple, or combined as just described, for he makes no distinction,) "that this means, much as it has been approved by distinguished men, and in despite of the examples of cures obtained by it, in our possession—suits only in the preliminary stage of the organization, and when the fragments correspond end to end. It seems, indeed, that it must make little impression on the articular cartilages of the new formation once fully developed, or on the fibrous substance sometimes serving to connect the bones. (*Op. citat.* p. 500.) Oppenheim and Amesbury in some degree concur with him in these views. He admits, however, that it sometimes happens, that even when the fragments correspond only by the side, a very slight rubbing suffices to dispose them to reunite; and instances the case in point which we have already quoted. Dr. Norris exhibits in his tables the analysis of 10 cases, all of which were cured in the manner just discussed.

Greater benefit has been alleged to accrue from the employment of firm and regular compression associated with rest, which has been so pre-eminently useful in the hands of Mr. Amesbury. If not the originator of this method, Mr. Amesbury has done a great deal towards establishing it as an independent and important mode of treatment. This gentleman's array of successful cases (to the amount of 16 out of 17 detailed, besides many others not enumerated,) in his own practice affords strong support to his position in relation to the superiority of his treatment. It has found staunch advocates in Brodie, Lonsdale, and others, in Great Britain, and Wright, of Baltimore, in America, each of whom has repeatedly satisfied himself of its favourable operation. It has also succeeded in France and Germany. Dr. Norris's summaries present 23 cures and 1 partial cure out of 28 cases treated in this manner. The compression of the fragments and their comparatively perfect rest in close apposition, are effected in various ways according to circumstances and the preference of the operator. The common roller, padded splints, compresses, and the tourniquet constitute the materials of an excellent apparatus always at hand. Mr. Amesbury is in the habit of using the fracture machines invented by himself, by which he can press the fractured surfaces in any direction against each other, at the same time preserving them from the slightest motion.

The simplicity, ease of application, slight inconvenience, as well as perfect safety of this plan of treatment, no less than the amount of evidence in favor of its efficiency have gained it an extensive adoption. Some persons are ready to believe it destined to supersede the seton and all the severer remedies. Nevertheless, it is not without strong opponents; Liston among others decries it as useless, and Oppenheim thinks it the least applicable plan, because where it has cured, the same end could have been achieved by less troublesome and tedious means. When, continues this author, no cure follows, the condition of the patient is not, as Amesbury, Brodie, &c., declare, the same as previously. For, besides the loss of time incurred, the disease is materially exacerbated, the joint being actually more strongly developed. He asserts that the expedients of Mr. Amesbury are only capable of fulfilling completely the indication to keep the fragments quiet in their respective places, and can but very partially and uncertainly create the inflammation, which he (Oppenheim) considers so vitally essential to the renovation of the bone. Nor does he forget to remind us that Brodie himself confesses that frequently no fresh inflammatory action is excited, and that he has met with cases where no union had occurred at the conclusion of the treatment. Velpeau also insists on attributing the success of pressure and rest, especially as practised by Wright, merely to the more complete immovability of the limb secured by the instruments adopted. Amesbury himself has been disappointed in some instances, and acknowledges that his method is not to be relied upon in certain cases. It is apt to be inert on a loose joint with a thick adventitious capsule, or where there is a considerable mass of condensed cellular and chondroid membrane between the fragments. There are instances also in which the displacement of the fractured ends is so great as to put the use of pressure and rest out of the question. But there are other cases to which it seems peculiarly adapted; such are those where there is a large and irregular callous tumour, together with angular displacement or extensive overlapping of the bones. Examples of these deformities, in which splints and the tourniquet were employed with the most gratifying results are reported by the author of the treatment, as well as by Brodie, Syme, &c., &c., and still more recently by Norris in the Pennsylvania Hospital of this city.

The following data are taken from the summaries appended to the very valuable unpublished statistical tables of Dr. Norris, to whom our readers are already indebted for other interesting matter of the same nature.

Of the 28 cases in which pressure and rest were used—

10	were on the	Femur	of which	8	were cured.
5	"	Leg	"	5	"
10	"	Humerus	"	7	"
3	"	Fore-arm	"	3	"
28				23	

The longest period that the fracture had existed in the above cases was 66 weeks (femur.) The shortest was 4 weeks, (fore-arm, ætat. 12.) The longest period required for the cure was 5 months, (humerus, ætat. 24.) The shortest was three weeks, (humerus, ætat. 53.)

We come now to the operations on the bones themselves. That of John Hunter, (if we except the seton as employed by Physick,) is the simplest. All that was necessary in his view was to lay open the cavity of the joint, and irritate the ends of the bone involved in it. (*Principles of Surgery*, Palmer's ed. vol. I, p. 504.) Brodie (*Op. citat.* p. 57,) cites a case in which this was successfully resorted to by Sir E. Home. The editor of Hunter's Surgery (*Loc. Citat.*) states in a note that this operation had lately failed in two cases at St. George's Hospital. Sir C. Bell proposed to effect the requisite irritation with the smallest possible external opening by the aid of a long and sharp instrument to be pushed obliquely down upon the bones. "By this means," said he, "I imagined the wound made by the transit of the instrument would immediately heal, and yet the extremities of the bone be so excited as to resemble the state of simple fracture more than could possibly happen after cutting down upon and sawing off their ends. (*Operative Surgery*, vol. II, p. 326.)

Hot Iron.—Mayor, in a case of obliquely fractured femur of 7 months standing, and in which friction and pressure had proved unavailing, succeeded in stimulating the bony surfaces and surrounding tissues into a disposition for reunion, by subjecting them to heat through the agency of an iron rod heated to the boiling point of water. The canula of a large trocar was introduced between the oblique ends of the fragments, and left 8 hours in place. Through it a stylet of iron which had first been held in boiling water was repeatedly passed. (*Nouveau Syst. de Déligat, Chirurg.* 1838, p. 304.)

Escharotics.—White, of Manchester, in his second case of resection rubbed the new surfaces of the bone with the butter of antimony. Mr.

Cline was probably the first to use caustic applications to the fragments without previous excision of their ends. Since then it has been employed by Greene and others in Great Britain, by Hewson, Barton, Harris, Kirkbride, Norris and others in America; and, according to Oppenheim, by Ollenroth and Weilinger in Germany, and Mayor in France. Fuming nitric acid, caustic potash, butter of antimony and nitrate of silver have been severally tried. Hewson in his case removed the dense cellular membrane connecting the fragments, with a knife before he touched them with the alkali. Norris's case was the sequel of an oblique fracture of the humerus near the condyles, attended with overlapping. The joint was very loose and had existed four years, during five or six months of which friction was persevered in without avail. The transmittal of a seton between the fragments, proposed as the next most promising plan of procedure in this case to friction was rejected in consultation, owing to the close proximity of the ulnar nerve and humeral artery, as well as the elbow joint, to the course it must have taken through the injured part; and because the records of surgery exhibit many failures of the seton in cases of long standing. "In these latter cases," continues Dr. Norris, (whose language we have endeavoured to preserve as nearly as practicable, in the foregoing and succeeding passages,) "excision of the ends of the bone, or the application of caustic after free exposure of it are the means most to be relied upon. The first of these, besides, being a much more formidable operation, and productive of more pain and danger than the latter, would have been in the highest degree difficult, if not altogether impossible, in the case before us, from the nearness of the false joint to the elbow." The seat of the previous fracture was laid bare—the thickened cellular substance connecting the two ends of the bone was then cut through, and the wound carefully dried; after which caustic potash was freely rubbed over them *until a black eschar was formed.* The limb was dressed and treated as for a compound fracture. With the exception of one or two attacks of hæmorrhage attributed to idiosyncrasy, no bad symptoms presented; and in about three months the bone had become perfectly firm. (Report of Surgical Cases, at the Pennsylvania Hospital, *Amer. Journ. Med. Sci.*, February, 1839.)

Rasping.—Cutting down upon the fragments, scraping the opposing surfaces, approximating them and treating the injury as a compound fracture, was a method known to the Arabian physicians. Avicenna declares, that Hali Abbas witnessed the death of a philosopher in consequence of such a mode of treatment. Guy de Chauliac blames this philosopher for having acted very foolishly, in not contenting himself with his lameness. (Boyer, *Malad. Chirurg.* vol. iii, p. 105.) This operation was performed by Vincent in London on a joint of both bones of the fore-arm. Death followed on the fifth day. (*Lancet*, vol. xiii, 1827.) Scraping the ends, and retaining lint between them was practised with a more fortunate issue by Brodie in 1834. (*Lond. Med. Gaz.*, July, 1834.)

M. Barthelemy suggested that the ends of the bone should be scraped by a rasp in the form of a saw, conveyed down to the fragments by means of a canula. (*Velpeau, Op. Citat.*, tome ii, p. 588.) A Dutch surgeon, named Vander Haar, according to Oppenheim, "very unwisely" proposes the exposure of the articulating surfaces, scraping them with the trephine, and then covering them with the butter of antimony, as the only remedy, except resection capable of accomplishing a restoration to health.

Resection or Excision of the Ends of the Fragments.—This is confessedly, one of the most dreadful operations in surgery. Boyer believed that it was familiar to the Arabian physicians, and based his opinion on a passage which he refers to in Avicenna. Dezeimeris, although he asserts that Boyer misinterpreted this passage, informs us that, in another place, Avicenna does describe the operation. (Dezeimeris, *Dict. de Méd.*, tome xiii, p. 500.) Be this as it may, there is a case described by J. L. Petit, (*Dis. of Bones*, p. 358,) in which that surgeon effected union in a fracture complicated with caries by removing the carious portions of the jointed bone and subsequently applying the actual cautery to its diseased extremities. But to White, of Manchester, is unquestionably due the merit of having introduced resection in modern times, and made it a distinct and definite radical operation. He cut down to the bones upon their most accessible side, carefully avoiding large nerves, arteries, &c., exposed, and if necessary, turned out the ends of the fragments and removed them by means of a saw. Then readjusted the fragments, bringing together the raw surfaces as in the operation for hare-lip, and afterwards treated the wound as a compound fracture. The details of the operation as to the mode of performing it, the instrument (chain saw, &c.) used, and the amount of bone removed have varied from time to time in different hands; but the general characteristics are essentially the same in every instance. In his second operation, White contented himself with excising one extremity, merely irritating the other. Inglis, Dupuytren, Syme, and others, have followed his example, and have in this way more than once considerably diminished the difficulties, sufferings, and dangers of the operation without sacrificing its efficiency.

Such is the character of resection, as one of the gravest operations, that few surgeons of the present day are willing to undertake it under any circumstances, without considerable hesitation. The majority regard it as, at best, but a last resort in preference to amputation, and only to be attempted in the most promising cases, and at the urgent solicitation of the patient. Some writers on the subject reject it altogether. Among them are Boyer, Richerand, Larrey, C. Bell, Wardrop, Brodie, Amesbury, Liston, Oppenheim, &c.; and Physick, Dorsey, Gibson and others, of this country, all of whom oppose it on the ground that it is tedious, painful, often extremely difficult, and apt to be followed by a reaction so violent as to expose the patient to great suffering and danger for a length of time, if it do not involve his life. While in the end, a cure cannot be confidently looked for, and at all events, must generally be expected only at the expense of a shortened limb. Sommé denounces it as barbarous; and describes a case witnessed by himself, in which, after a tedious and very difficult operation, long confinement, with free suppuration, troublesome hæmorrhage, and great trouble in keeping the bones in place, no union was obtained.

Rowlands, of Chester, England, after having successfully performed the operation on the femur, remarks, "Though I have several times performed all the principal operations in surgery, and many of them very often, I confess this far surpassed any thing I had ever undertaken or witnessed, and I am doubtful as to the propriety of recommending it to others." (*Loc. citat.*)

Gouraud calls it a retrograde step in surgery; Velpeau, from whom we quote Gouraud's opinion, in speaking of the very serious nature of resection, refers to a case given by Vallet on the authority of M. Gable, of an excision of the two extremities in a supernumerary joint of the femur. The operation was bloody, and lasted more than an hour; the patient, who was young and vigorous, had convulsions, and died in the evening. (*Méd. Op*. p. 589.) The number of published failures as given by Oppenheim, Velpeau, Norris and others, even supposing there were no unsuccessful cases, all accounts of which have been suppressed, show that a large proportion of the trials of this remedy have disappointed the operators, while some of them (not a few, considering the little real necessity for incurring the risk) were fatal.

Resection has been performed by many distinguished surgeons, on both sides of the Atlantic. They have at different times made each of the long bones of the extremities, also the inferior maxillary bone, the subject of it. Oppenheim, in summing up the cases of supernumerary joint, known by him to have been treated in this way, found that of 37 cases, 21 proved successful and 16 fruitless, 4 of the latter having been fatal; 17 out of the 37 were joints of the humerus, 6 only of the 17 recovered, and 3 died. Dr. Norris has made an abstract of the general results of 28 cases, (many of which are also included in the summaries of Oppenheim,) which is, however, more favourable to the operation. 20 of them were cured, 1 partially cured, 3 were not benefitted, and 4 died. Of these,

9	were on the	Femur,	of which	6	were cured.
4	"	Leg,	"	3	"
8	"	Humerus,	"	6	"
6	"	Forearm,	"	5	"
1	"	Jaw,	"	1	"
—				—	
28				21	

The longest period that the fracture had existed in the above cases was three years, (lower jaw.) The shortest do. was three months and twelve days, (radius, ætat. 26.) The longest period required for the cure was thirteen months, (femur, ætat. 26.) Shortest, one month, (forearm.)

According to the appreciation of Velpeau and some others, excision of the ends is the only efficacious remedy in disease of the bone, such as hydatids, caries, necrosis, &c., and in old fractures where the extremities of the fragment have become engaged in the soft parts so as to prevent their reduction and coaptation. At all events, says Velpeau, (*Op. citat.* tome ii, p. 592,) we ought never to decide upon it before having well weighed the dangers. Obliging us to penetrate even to the centre of the limb, to separate and dissect the flesh to a considerable extent, it transforms the affection into a recent complicated fracture, with a deep wound; whence the risk of suppuration, erysipelas, inflammations of every kind, caries, necrosis, and even of purulent infection and phlebitis. This advice is to the same effect as that given by Sanson and Vidal de Cassis, and accords with the views entertained by the greatest number of good surgeons. Yet Hammick and a few others continue to regard resection as the only efficient remedy in cases requiring any operation.

Dr. J. Kearny Rodgers, of New York, has increased the complexity of the operation and the after treatment, and enhanced their dangers by not only excising the ends but drilling a hole in the extremity of each fragment, through which he passes a silver wire to bind the bones together. Dr. Heard reports a case of supernumerary joint of the humerus, another of the radius, and a third of the femur, for which this mode of treatment was resorted to successfully in the New York Hospital. He also cites a successful operation of this kind upon the humerus, by Dr. Mott, and another on the humerus by Dr. Cheesman, but gives no particulars. The first case reported by Dr. Heard was that of a lad of fifteen, who had fractured his humerus two inches above the elbow, more than two years before. He had worn the seton seven days at one time, and six months at another, without benefit. On the 31st of July, (1827,) Dr. R. removed half an inch of the extremity of each fragment, but finding it difficult to retain the fragments in apposition after having with some trouble reduced them, he drilled a hole into the medullary cavity through the shell of each end; through these holes a silver wire was passed, and the ends of the bone retained in coaptation. The ends of the wire were drawn through a canula which remained in the wound. On the sixteenth day the canula fell from the wound, with the loop entire; the bones, however, continued in proper position. The arm was not examined for a month; during this time the wound had almost healed. Union was found to have taken place in sixty-nine days. Patient was not allowed to leave his bed for two months after the operation. The arm was two inches shorter than its fellow. Case 2d, was a German, ætat. 26, with a joint of the radius two inches above the radio-carpal articulation. The ends of the fragments were removed with the bone pliers. A hole was now drilled into each extremity; and a silver wire being passed through, the bones were approximated by twisting this, the ends being allowed to hang from the wound. The wire came away with the loop entire on the thirteenth day; union was complete in eighty days. The third case was an interesting one, presenting in the previous accident an unusual assemblage of severe and complicated injuries. A man, ætat. 28, of strong constitution and perfectly temperate habits, was brought into the hospital with a compound fracture of the bones of the forearm; a compound fracture of the bones of the left leg; a fracture of the right os femoris, near its middle; and severe and extensive lacerations and contusions elsewhere, on the head, trunk and extremities. The fracture of the leg united in eight weeks; union also took place in the fore-arm. Nine months after the receipt of the injury, resection was performed upon the thigh by Dr. Cheesman. The fragments were reduced by the aid of powerful extension and counter-extension, and retained in apposition by means of the twisted silver wire. The operation occupied one hour and a half. The limb was dressed as in the other cases, with an appropriate apparatus. An attack of erysipelas followed this operation, with the exception of which the patient did well. The wire having nearly made its way out, was removed on the 69th day, the bone apparently united. Perfect union was found to have taken place on the 95th day, with the limb two inches shorter than the other. (*Heard on Ununited Fractures, N. Y. Journ. of Med. & Surg.*, Oct. 1839.) Resection and the wire suture have been recently tried with satisfactory results in France, by M. Flaubert, of Rouen, upon a supernumary joint, in which the fragments could not be kept in contact. "The idea," says Malgaigne, who notices the case, "appears to me very ingenious, and susceptible of many other applications." (*Méd. Opérat.* p. 249.)

Liston has discountenanced this operation as more apt to lead to necrosis than to consolidation of the fragments. His objection, that it is too artificial and liable to produce necrosis by the exposure of the bones, and their greater or less denudation of the periosteum, still appears, we confess, extremely plausible, notwithstanding the counter representation of Dr. Heard. A greater number and variety of instances of success than even the well marked ones already quoted, we think, are needed to establish an operation so adverse to all our theoretical notions, and withal, so full of pain and peril. If the wire be intended solely to retain the fragments in apposition, it might be asked whether this indication may not be fully met in the great proportion of instances, by the aid of a proper apparatus without necessitating the recourse to such a painful, hazardous, and not positively certain expedient. This method is liable, in the fullest extent, to all the objecjections preferred against resection, while the data are insufficient to determine its superior efficacy. The idea of employing wire to connect the fragments of a broken bone, whether after resection or without it, is not by any means new, as supposed by Dr. Heard. M. A. Severinus long ago proposed to freshen the edges of the fragments of an ununited patella, and then to tie them tightly against one another. (Velpeau, *Op. citat.* tome ii, p. 591.) The *Journ. de Med.* (par Roux, tomes xliii, xliv, xlv,) for 1775, contains a violent controversy between two surgeons of Castres, named Icart and Pujol, respecting an operation to approximate the fragments of a broken bone, and to bind them together with a leaden or silver wire. Jeart maintained its feasibility in certain cases, which he describes, and states that he has seen it performed with success. Pujol strongly condemns it, and asseits it to have been fatal in one instance. In 1818, M. Dupuytren employed platina wire in this way, (though without passing it through the substance of the bone,) in a supernumerary joint of the lower jaw of nearly three years' standing. (*Leçons Orales*, tome iv, p. 669.) He resected the posterior fragment, rasped the anterior, and secured the two in close apposition, by means of a platina wire passed around the teeth. The practice had been vaguely suggested in 1805, by M. Horeau in a similar case. (*Journ. de Méd. Chirurg. et Pharm.*, in 40 vols., vol. x, p. 197, 1805.) Some three or four years since, a surgeon of this city attempted to produce bony union of a fractured patella, by passing a wire through a hole bored in the fragments, and thus binding them in apposition. Violent local and general reaction followed, and the patient succumbed on the fourth day. Malgaigne very recently treated a fractured patella with happier results, by means of a sort of very fine pointed iron clamps, so contrived as to be fastened together, while they firmly held the fragments by their points, (two to each clamp,) which had been pressed through the integuments into the substance of the bone. Although, as far as we are informed, no harm resulted from the last described experiment, we may confidently predict that few operators will have the hardihood to repeat either of them.

The Seton and its Modifications.—The honor of having first applied this invaluable remedy to the treatment of supernumerary joint is well known to belong to Dr. Physick. He used the seton for the first time in 1802, at the Pennsylvania Hospital. About three years after, the same instrument was resorted to with success in the treatment of a compound fracture of the thigh of long standing by Baron Percy at Augsburg.

The new application of this well tried therapeutic instrument was hailed upon its announcement as a brilliant improvement in modern surgery, and welcomed as the long desired substitute for the more sanguinary measures. It has been tried by many surgeons, and with various success. Like all remedies, and especially like the remedies for this infirmity, to all the varied characters of which no single one has yet been found to be adapted, it occasionally fails. Yet it still maintains a high reputation as more rational than the other remedies in which the knife is resorted to, because it is simpler, less difficult, less painful and safer than either of them; while it is as often, if not more frequently effectual. It is extolled by Allan, Wardrop, S. Cooper, Liston, Mayo, Rognetta, Weinhold, Portal, Oppenheim and others in Europe, and by Physick, Dorsey, Mott, Gibson, Hays, and others in this country. On the other hand, Boyer, Zang, Brodie, Hammick, Amesbury, Lawrence, &c., decry it as, at best, of doubtful utility. The last named authority condemned it without reserve as an abandoned operation, which had been performed some two or three times with indifferent success. In answer to this "cavalier dismissal" of a well established mode of treatment, Dr. Hays soon afterwards published in the *American Journal of Med. Sci.* for November, 1830, a very interesting and valuable summary of 13 different cases successfully treated with the seton, which he collated from the works in his private library alone without any more extended research.

Oppenheim prefers the seton to resection, 1st, because it cures generally without shortening. 2d, because it produces a less prejudicial constitutional and local impression, and can never endanger life. He remarks, that on account of its mild influence, it has hitherto been employed in a number of cases in which it was not clearly indicated; as for instance, where the fragments were united by a broad cartilaginous mass, or by a genuine artificial joint, *i. e.*, a bursal structure. In regard to this, experience has shown that the common seton is not always to be relied upon in supernumerary joints of long standing, still less useful can it be in cases (comparatively speaking not very rare) in which the disposition of the fragments in the soft parts, is such as to prevent their requisite approximation. In the first mentioned class of unpromising cases, the modifications of Oppenheim, those of Gulliver and Rhynd, or that of Sommé, each of which will be noticed directly—may be found useful by the practitioner. Dr. Physick himself discouraged its use in supernumerary joints of the thigh, and he has, in some instances, advised against it in similar joints of the bones of the leg. Two of the instances of ill success in the application of the seton to the thigh, given by Dorsey, might, from his own account of them, be attributed in degree, at least, to the unfavourable disposition of the fragments. In his own words, "it was found impossible to bring the bones nearly together."—(*Dorsey's Surgery*, vol. ii, p. 117.) The summary of Oppenheim, (which, however, it must not be forgotten, is, like the others, quoted in this paper merely numerical, and to be received accordingly,) would seem to show that in the operation with the seton as well as that of resection, the greater number of failures have been met with on the humerus. Of 48 cases in which the seton was applied, 26 were cured, and 22 remained uncured; 2 of the latter died. The seton was tried in 16 cases of joints of the shaft of the humerus; only 6 of these were benefitted, and death followed in two instances of the remaining ten. From Dr. Norris's valuable statistics, for the use of which we must again express our acknowledgments, it appears that—Of 30 cases in which the seton was employed, 23 were cured, 3 partially cured, 3 received no benefit, and 1 died.

10	were on the	Femur,	of which	7	were cured.
5	"	Leg,	"	5	"
9	"	Humerus,	"	5	"
5	"	Forearm,	"	4	"
1	"	Jaw,	"	1	"
30				22	

Of these 30 cases, 14 are stated to have had an incision made down to the bone previous to the introduction of the seton, and 15 had it passed without a previous incision. Of the 14, 11 were cured, 2 amended, and 1 died. Of the 15, 11 were cured, 1 amended, and 3 failed. In one case included in the above 14, the seton was passed through a previous fistulous opening. The longest period that the fracture had existed in these cases was 2½ years, (femur, ætat. 28.) The shortest, was 2 months, (humerus, ætat. 24.) Longest period that seton was allowed to remain in, was 13 months, (humerus, ætat. 48.) Shortest, 7 days, (forearm.) Longest period required for the cure was 5 months, (femur.) Shortest, 1 month, (leg, ætat. 24.)

These summaries include some of the cases treated by the modifications of the seton which yet remain to be noticed. It is well known that in the United States the seton has been so long considered a remedy of unquestioned powers, that it has proved successful in many instances, which the operators have not thought it worth while to publish. The probable number of such facts, known only to individuals, may perhaps be taken, at all events, to balance the weight of the failures which have been consigned to oblivion.

There are different modes of using the seton, as well as modifications of the instrument itself. Dr. Physick passed it through the joint by means of the seton needle alone, without a previous incision; and always preferred this mode when practicable. He was particular also in directing that the seton should not be withdrawn, for weeks or even months, unless the bony union be found to have fairly begun. A want of attention to this rule of practice has been suggested, as probably the occasional reason for disappointment in the use of the seton. (*Dorsey's Surgery* and *Gibson's Outlines of Surgery.*) Liston, however, one of the strongest advocates of this remedy, entertains very different views. He would have us cut down upon the fracture, dividing the soft parts as little as possible, introduce a perforator between the ends of the bone, and turn it well round, then insert a seton, not caring that it should go exactly betwixt the ends of the bone, because he would rather pass it over the surface of the broken ends, and perhaps one on each side. Shake the limb a good deal about, and move the instrument rather roughly. The object is to excite a good deal of action; when that has been done, agreeably to his belief that the seton has done all the good that possibly can be attained by it, and that by remaining longer in the wound it would weaken the powers of the part, he withdraws it, and directs the ordinary treatment for a recent fracture. By this process, and also by increasing the size of the seton, and smearing it with a stimulating powder, (Hyd. Oxid. Rubr.) he has succeeded in several instances. (Clinical Lectures on Fractures, *Lancet*, April 30th, 1836, p. 176.) Oppenheim, believing that the single seton was in many cases incapable of producing adequate reaction proposed to employ two setons, one lying in contact with each bony surface. In two cases of false joint of the humerus, in which he adopted this plan with the most gratifying results—in one of them the common seton had been fairly tried—he operated in the following manner. He made an incision on the outer side of the arm down to the bone, then, by a rotatory motion, passed a common prismatic seton needle through the mass of flexible substance immediately in contact with the surface of the lower fragment; next he drew repeatedly, to and fro through the opening just made, a thick silk seton, which was fastened on the forearm. The second seton was then applied in the same manner to the upper fragment, and fastened on the shoulder. (*Op. Citat.*) Prof. Weinhold, at Halle, proposed to increase the irritation, and, at the same time, protect the bones from the injurious influence of the air by a funnel-shaped wound and a wedge-shaped seton. A wound an inch long was made down to the joint, the connecting membrane having been perforated with a needle trephine, through the eye of which had been passed a piece of tape with the cuneiform seton appended; this last was drawn by means of the needle and tape, (which were brought out through the integument of the opposite side of the limb,) so as entirely to fill the vacant space between the extremities. He reports 3 examples of this method of treatment, 2 of them successful, the second a joint of the femur 10 years after fracture with caries and fistula, and a third fatal, owing to previous caries of the acetabulum. (*Med. Recorder*, Jan. 1828, p. 178.)

For a joint of the tibia, eight months after fracture, in May, 1838, M. Saurer passed a seton, not between the fragments, but around their margin at the breach of continuity. Having cut down to the bone internally and externally at the seat of injury, he introduced a seton, half an inch broad and somewhat curved, through the outer opening around the fractured portion of the bone, and drew it out through the internal wound; in less than three months after the operation the patient was well. (Oppenheim, *Op. Citat.*) In 1835, Mr. Gulliver proposed that, in the treatment of artificial joints if the seton be employed, there should be two, one of which should be placed around each fragment, at a *short* distance from the line of fracture, because it is in those points that the deposition of bony matter commences. More recently, Mr. Rhynd, of Dublin, instead of passing the seton between the disconnected ends, so directed it as to leave it in contact with a considerable portion of their circumference. He has twice employed it in this manner with complete success. (B. Phillips's *Lect. on Surg.*, *Lond. Med. Gaz.*, May 22d, 1840.) In 1828, M. Sommé, of Antwerp, produced the consolidation of an oblique fracture of the femur, the fragments of which overlapped and moved on each other six months after the accident. He employed a silver wire, used somewhat like the ligature in the treatment of fistula; and his object having been to excite inflammation on a larger surface than the seton could possibly affect, and to keep up the inflammation, actively changing the point of irritation. He passed a long trochar at first downwards on the inside of the upper fragment, and made it pierce the skin behind and a little to the outside; the trochar was then withdrawn, and a silver wire passed through the canula, and out at the posterior opening. The canula was then withdrawn, and, being replaced on the trochar, they were introduced again above and on the outside of the lower fragment, and made to issue at the same opening behind, leaving a loop in front. I then made an incision, continues Sommé, in front from one orifice to the other, made by the trochar, drawing the extremities of the wire through the wound, brought the loop between the fractured ends of the bone and the approximated edges of the skin, with sticking plaster. The limb was kept at rest in a box so contrived, that the wound could be dressed without disturbing the fragments. At each dressing, he drew down the wire so as to depress the loop more and more into the flesh; no bad symptóms presented; and union was distinct six weeks after the operation. The wire was withdrawn five or six days after union had become evident, but before it had quite divided the soft parts which it encircled. The wound cicatrised in about two weeks. Three months after the performance of the operation, the apparatus was removed, and the patient got well with a considerable callous tumour but no shortening. (*Med. Chirurg. Trans.* vol. xvi, p. 43.)

In a case of jointed tibia thirteen weeks after fracture, Seerig affected union by a process somewhat resembling that of Sommé. He employed a seton, or ligature as Troschel calls it, composed of twelve threads, which he looped about the connecting membrane between the fragments, and daily tightened by means of a serre noeud of Græfe. A longitudinal incision two inches long, was made on each of the two sides of the tibia, parallel to the ridge of that bone, while the fragments were as much as possible separated from each other; then with a needle, curved like the letter S, he conducted the ligature around the interarticular mass. The ligature came away the sixteenth day; at the end of a month the external wounds were cicatrised, and two weeks after the consolidation was complete. (*Arch. Gén.* for Jan. 1839, p. 105.) We are not aware that either of these ingenious operations has been performed more than once.

The method of Sommé is favourably mentioned by Sanson and by Vidal de Cassis. Oppenheim regards it with respect, but naturally prefers his own modification. We would be glad to see the latter, as well as the methods of Gulliver, of Rhynd, of Sommé, and that of Seerig, subjected to the test of further experiment. They appear to be as rational as any of the plans hitherto in vogue, in which the knife is used, and may prove to be much more applicable to the majority of cases. Certain it is that neither the seton as at present employed, nor any of the various radical operations, have the slightest claim to be regarded as specific in the treatment of supernumerary joint.

"The result," observes Oppenheim, "of all the methods hitherto applied for the cure of this lesion is so unfavourable, that several of the most astute surgeons are fearful of recommending any of them. Larrey maintains, that in those cases in which a cure has been effected, the artificial joint was not very chronic, there had been no loss of osseous matter, the fragments were in contact, and, lastly, the patient was young. If union does not take place after bandaging, the application of oily and aromatic frictions, and quiet and regimen, the case must be left to nature. The patient by degrees becomes habituated to his lameness, which is gradually lessened by time and use, and, finally, the limb being enveloped in pasteboard, is of almost unlimited service. He instances five cases supporting his views. Boyer, Richerand and Palletta are not more favourably inclined to the methods usually employed."

We are not prepared, after a careful review of the history of the treatment of supernumerary joints, to take so discouraging a view of its uncertainty; but we cannot help feeling, in the highest degree, impressed with the great importance of giving more and more attention to the indications in individual cases, by which means alone can be determined the precise value of the different modes of treatment in each form of pseudarthro .

REVIEWS.

Art. XII. *Observations on the Diseases incident to Pregnancy and Childbed.* By **Fleetwood Churchill**, M. D. Dublin, 1840, 8vo., pp. 463.

On a recent occasion* we had the pleasure of introducing to the favourable notice of our readers, Dr. Churchill's "Outlines of the Principal Diseases of Females." The volume then under review included only such affections of the female as occur independently of gestation and parturition; in that now before us, which, strictly speaking, is a continuation of the same work, the author, in completion of the plan originally proposed, considers such diseases as are incident to pregnancy and childbed.

The same admirable method and arrangement which characterized the former volume, are adhered to in the present—the text exhibiting a concise view of all the leading facts connected with the pathology and treatment of the several maladies it embraces, while, in the form of notes at the foot of the page, are presented such confirmations and amplifications of the statements in the text as appeared necessary or desirable, together with references to numerous sources of additional information or more extended details.

The two volumes of Dr. Churchill form a very complete and comprehensive digest of the diseases peculiar to the female sex. While from the excellency of their plan, and the general accuracy of the views presented, as well pathological as therapeutical, they constitute one of the very best manuals we possess for the use of students; they will be found also, from the industry and care with which the author has collated the numerous authorities in relation to the several subjects of which he treats, and the amount of valuable matter the volumes contain, in a very condensed, but, nevertheless, perfectly clear and definite form, a desirable addition to the library of every practitioner. The volume before us is divided into two parts, the first of which treats of the Disorders of Pregnancy.

In the initial chapter of the first part, Dr. Churchill presents, very succintly, but, at the same time, with great clearness and distinctness, an account of the more striking and important of the local changes, and constitutional sympathies which are the results of conception and utero-gestation. This forms a very useful and appropriate introduction to a consideration of the pathology of those disorders which constitute the subject of the present portion of the author's outlines—the correct acquaintance with which will, in many instances, be not a little facilitated by a correct understanding of the several particulars here presented.

The second chapter, which is likewise introductory, comprises some very judicious general instructions for the management of pregnant females. We are pleased to find that Dr. Churchill altogether discountenances a ridiculous and even mischievous opinion which is still entertained and acted upon by many accoucheurs in this country; that, namely, the taking away blood and the administration of purgatives are demanded in nearly every case of pregnancy, entirely irrespective of the presence of any particular accidental circumstances, for the removal of which blood-letting or purgatives may be required.

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* See this Journal for Aug. 1839, p. 394.

"No doubt, I believe," Dr. C. very properly remarks, "now exists in the minds of well-informed practitioners as to the propriety of blood-letting when symptoms demand it, but the practice of taking away blood merely because a woman is pregnant, is strongly to be reprobated. It may injure some, do neither good nor harm to others, and will relieve those only whose condition requires it.

"Many writers object to the employment of purgatives (just as they do bleeding) altogether; and others give them systematically; the correct course is undoubtedly to avoid either extreme. The bowels must be free, and when nature is insufficient, we must have recourse to laxatives. The mildest which will answer the purpose is the best. An occasional dose of castor oil, electuary of senna with sulphur, (especially if there be piles,) or saline purgatives, in small quantities, will be found sufficient; or the patient may use the 'lavement' of warm water or gruel once or twice a day. This is peculiarly suitable when the stomach is irritable."

The very great importance of a regular condition of the bowels in pregnant females cannot be too strongly urged upon the attention especially of young practitioners. To maintain this condition a resort to occasional laxatives will very generally be found necessary in the latter months of gestation, when costiveness is almost invariably present, and if not obviated will not unfrequently give rise to an accumulation of fæces in the rectum sufficient to impede materially the progress of labour and prevent the free exit of the head, if it be not productive of even more dangerous results.

There is an objection, however, to the frequent use of castor oil—the article usually directed to pregnant women in this country—which is, that it ordinarily augments instead of diminishing the tendency to constipation, and, as we have generally observed, aggravates any hæmorrhoidal intumescence under which the patient may happen to labour.

The disorders of pregnancy are arranged by Dr. Churchill into three classes: 1. Local diseases of the sexual system; 2. Diseases arising from sympathetic irritation; and, 3. Diseases arising from mechanical causes. To each of which classes a separate section is devoted.

Of section 1, the first three chapters treat, respectively, of œdema of the labia—the intumescence arising from which is, in a few rare instances, so extensive as to interrupt the passage of the head of the child and interfere with delivery until the fluid is evacuated by punctures or incision—of pruritus vulvæ, which is occasionally experienced only during pregnancy, the female being entirely free from it at other periods—and of that form of vaginal leucorrhœa which would appear to depend upon an irritation extending from the gravid uterus to the lining membrane of the vagina and causing a morbid increase in its mucous excretion, which augmented excretion often persists during the entire period of utero-gestation, but ceases soon after delivery.

In relation to each of these subjects, Dr. Churchill has given a very satisfactory outline of the present state of our knowledge, with the exception perhaps of the second, which is merely introduced with the view of presenting a case from Dr. Dewees, in which the pruritus was found, upon examination, to depend upon aphthæ of the vulva, os externum and vagina, and was speedily cured by a strong solution of borax in water.

The subject of chapter 4 is "menstruation during pregnancy." The whole of this chapter is particularly interesting—embracing a considerable amount of information on a curious and still contested question—occasionally one of some importance in a physiological point of view, and which may have a bearing on certain points of medical jurisprudence.

According to Dr. C. the cases on record are too numerous and too well authenticated to leave us in doubt that a discharge resembling the catamenia in colour, quality and periodicity, does, not unfrequently, occur during gestation. The authorities quoted in support of this statement are Mauriceau, Puzos, Stein, Desormeaux, Johnson, Belloc, Van Sweiten, Frank, Chambon, Gardien, Capuron, Röderer, Beck, Dewees, Blundell, Gooch, Kennedy, Montgomery, Burton, Hosack, Francis, and Velpeau.

In some of the instances referred to, the female is stated to have menstruated only once or twice after conception, when the discharge has entirely ceased—in others it persisted during four, five, or six months, or even during the whole period of gestation.

"I have myself," Dr. C. remarks, "seen three or four cases of this deviation from ordinary gestation. In one it continued regularly up to the eighth month inclusive; in the others it was arrested between the fourth and sixth months, but in all it was well marked, returning regularly, and varying but little in quantity and quality from the ordinary discharge.

"Still more remarkable and rare are those cases where the catamenia appear *for the first time* during pregnancy; (Perfect, Reid, Velpeau;)—or *only during* gestation, (Daventer, Baudelocque, Dewees.)

"The evidence of so many accurate observers," according to the author, "undoubtedly establishes the point in question. I shall, therefore, merely allude to Denman's opinion, because of his eminence in the profession. He doubts the occurrence of menstruation during gestation, never having seen a case, and explains away the cases on record. Dr. Hamilton, of Edinburgh, in his recent work, agrees with Denman.

"Some little variation is observed in the discharge—it is generally rather paler than the ordinary menses. The quantity is sometimes greater than usual, but more frequently less. In none of these cases is the discharge coagulable, or accompanied with clots.

"It does not appear that there is any risk of abortion or premature labour, the *symptoms* being ordinarily much milder than previous to conception. There may be some pain in the back, and a sense of weakness generally, but not so great as to incapacitate the patient. The recurrence of the discharge does not seem to produce much, if any effect upon the growth of the child, the majority are of the full size when born.

"In regard to the pathology of these periodic discharges of a bloody fluid during pregnancy, different opinions have been broached. Its seat has been supposed to be the lower portion of the uterine cavity, before the ovum has attained sufficient size to fill it, or from the vessels of the cervix, whether internal or external.

"I do not see," Dr. C. observes, "how the first opinion can be in accordance with the fact of the canal of the cervix uteri being blocked up with mucus shortly after conception, or with the integrity of the *membrana decidua.* The second explanation appears to me to assign too limited a source to the discharge, though I question not that the mucous membrane covering the cervix may share with the vaginal mucous membrane the vicarious function. This view is rendered more probable by the circumstance that one of the patients, from whom Dr. Charles Johnson of this city (Dublin) removed the entire uterus, menstruated after the operation.

"As to the pathological *cause* of this deviation, it is more difficult to state any thing determinately. It appears to be owing to misplaced ovarian influence, and to that habit or necessity of periodical discharge which gives rise to the other varieties of vicarious menstruation. It is neither more nor less easy to account for a monthly discharge of apparently menstrual fluid from the vaginal mucous membrane, than from the mucous membrane of the gums, the eyes, the ears, or from the surface of an ulcer.

> "As so few symptoms attend this disease, and those few so slightly distressing, very little medical interference is required. The patient, to ensure safety, should be enjoined to preserve the recumbent posture so long as the discharge continues. Her clothing should be comfortable, but not too warm; her diet nourishing, but not too stimulating; and her occupations cheerful. An attempt has been made, in different ways, to arrest the discharge. Hippocrates advises the application of cupping glasses to the breasts. Whether as effectual for this purpose as for relieving amenorrhœa, I am unable to decide. Mauriceau and others, have advised bloodletting from the arm, but I believe that the general opinion at present, is in favour of a temporizing treatment."

In chapter 5, we have an account of "the discharge of a watery fluid from the vagina," without any apparent deviation from the healthy condition of the part. Among the most probable causes of this affection, are enumerated, an increased secretion from the vaginal mucous membrane; the discharge of the fluid collected between the chorion and amnion, or chorion and decidua, and finally, the escape of the liquor amnii, from an accidental giving way of the membranes, which, we are assured, may happen without bringing on labour. From remedial measures of any kind, but little can be expected in either of these cases. The brief outline presented by the author of the leading facts connected with this affection will be found altogether satisfactory.

"Excess of the liquor amnii, or dropsy of the amnion," is the subject of chapter 6. In those rare cases, in which the quantity of the amniotic liquor is greatly in excess, the principal inconvenience to the mother is the mechanical distress which is caused by it; the effects upon the child in utero are, however, much more serious; "it is," remarks Dr. Churchill, "either very feeble or diseased, when born at the full time, or dies before the completion of utero-gestation;—whether, he adds, the "injury arises from pressure, from the fluid being less nutritious, or from some other cause, it is difficult to say."

> "Besides the inconveniences resulting from this disease during pregnancy, it sometimes occasions delay in labour, from the too great stretching of the muscular structure of the uterus—which, however, is easily remedied—and flooding afterwards, from a kind of paralysis from previous over distension, which interferes with the due contraction of the womb."

The disease does not appear to be much under the control of medicine; of the measures that have been used to mitigate the sufferings of the patient, to facilitate labour, and, after delivery, to prevent the recurrence of the disease in a subsequent pregnancy, a brief but useful summary is given by our author.

The ensuing chapter is devoted to the consideration of a highly interesting subject, namely—Rheumatism and Spasm of the Uterus. By the British and American physicians, the fact of the not unfrequent occurrence of rheumatism, or, perhaps, more strictly speaking, severe neuralgia of the pregnant uterus, has been very generally overlooked. In Germany, however, it has attracted considerable attention. The affection has been accurately described by Wigand, Carus, Schmidtmuller, Joerg, Velten, Haase, Betschler, Henne, Busch, and Witche. In a late number of *L'Experi-*

ence, Journ. de Méd. et de Chirurg., will be found a very able paper on the subject by M. Dezeimeris, in which he has quoted numerous cases, and presented an analysis of the labours of preceding writers. It is from this paper chiefly, that the very excellent summary of Dr. Churchill has been derived.

"Rheumatism," says Wigand, "may attack the fibres of the uterus, as well as the muscles and their sheaths, marking its presence, as in other parts, by pain, the effect of which is to impede the contractility and motion, by increase of heat, swelling, &c. Along with the rheumatism of the uterus, there sometimes exists a general affection of the same nature; but more frequently the uterus, its appendages, and the organs immediately surrounding it, are affected, owing to their great irritability during gestation."

It occurs most frequently towards the termination of gestation, when the uterus has acquired its maximum distension. Dr. Churchill remarks, that there can be but little doubt that many examples of what are called false pains, are, in truth, instances of this rheumatic affection of the womb.

Cold is laid down, probably, as its principal cause. The disease was remarked by Velten during a general epidemic of rheumatism.

In mild cases, the symptoms are sudden shooting pains in the region of the uterus, occurring in paroxysms, with intervals of more or less complete ease. In more severe cases, it may be preceded by headache, uneasiness, giddiness, and general irritability; the pain in the uterus being very severe and of a spasmodic character, with distinct contractions of the uterus; giving rise, during their entire continuance, to intense suffering. If neglected, these expulsive efforts have sometimes resulted in abortion or premature delivery. The irritation is generally propagated to the bladder, causing an urgent desire to urinate, the discharge being attended with pain. The intestines also, sometimes, sympathize with the womb, giving rise to colic or diarrhœa, or both.

"The motions of the child are a source of great torment, owing to the increased sensibility of the womb—and from some sympathy, (it may be supposed,) with the mother, it not unfrequently happens, that these motions are peculiarly lively."

According to Joerg, the child is less frequently injured by rheumatism, than by simple inflammation of the uterus.

Severe cases are attended with quickened pulse, hot skin, restlessness, and loss of sleep. Nauche states that the irregular contraction of the womb is sometimes extended to the limbs.

"When the affection occurs during parturition, the pains are, as it were, arrested; they become tedious, ineffective, and often sudden and interrupted, occasioning more suffering than usual. The patient is hot, thirsty, and irritable, unable to remain long in one posture—the pulse quick, and either full, soft, and undulating, or small and hard.—(*Wigand.*) The uterus becomes very tender, the weight of the bed-clothes occasioning much pain. The sensibility may extend to its neck, rendering examination very painful.—(*Dezeimeris.*) During a paroxysm, the uterine tumour feels much harder than usual. If the case be left to itself, we shall find the pains become weaker, or even entirely suspended for some hours. If the patient should fall into a perspiration, and sleep, the natural pains will recur, and the delivery terminate favourably."

The prognosis is very generally favourable. Rheumatism is to be distinguished from inflammation of the uterus occurring during gestation, by the pain in the latter being more localized than in the former. The paroxysmal character of the rheumatic affection, and its suddenness of accession.

The treatment consists principally in the use of moderate antiphlogistic measures, aided by sedatives and diaphoretics; the patient should be warmly clothed, and her diet light and nourishing.

> "In a report by Professor Busch, of the Berlin Lying-in Charity, published about a year ago, it was stated," says Dr. C., "that in consequence of rheumatism of the uterus, it had been found necessary to induce premature labour. Such a case must be extremely rare, as I have met with no other on record.
>
> "The treatment of the disease," the author adds, "when it sets in during labour, does not vary materially from that described above—bleeding, opiates, and sudorifics being our main resource. It appears that neither form is very obstinate."

A very excellent outline of the pathology and treatment of *hysteritis* as it occurs in the pregnant female is given in chapter 8. The author has availed himself advantageously of the labours of the German physicians, especially Joerg, Siebold and Busch, by whom the disease has been described with great accuracy. The references to the more authoritative writers who treat of this affection, appended to the author's text, will greatly facilitate the labours of those who desire to avail themselves of the facts already accumulated in relation to its pathology and treatment. It is somewhat remarkable, that a disease which is of by no means unfrequent occurrence, and the effects of which are always of a serious character, unless it be appropriately treated in its earlier stages, should have attracted so little the attention of the generality of systematic writers on the diseases of females.

The second section of the volume before us treats of disorders occurring during pregnancy from sympathetic irritation; and first, of those of the chylopoietic viscera. In the first chapter, an interesting outline is given of the subject of toothache, so frequently an attendant upon pregnancy. On the subject of extraction, Dr. Churchill remarks—

> "It appears to me that extraction may be advisable, provided other medicines have failed, that the tooth is evidently diseased, and that there is no predisposition to abortion."

We would observe, however, that the young practitioner should be very cautious in advising the extraction of a carious tooth in a pregnant female, unless the intensity of the pain should itself endanger abortion, a result, which, according to Campbell, Capuron and Gardien is even more liable to occur from violent and long continued odontalgia, than from the removal of the affected tooth.

Salivation or ptyalism, its causes and treatment is the subject of the next chapter; the text and accompanying notes are equally instructive.

In relation to the fastidious taste and capricious appetite of pregnancy, the author presents in chapter 3, a very excellent summary of the facts and opinions recorded by the best authorities, with very full notes and references. The subject is one that derives a degree of interest from the erroneous notions that have prevailed in regard to it, rather than from its intrinsic importance. The views presented by Dr. Churchill are marked by good sense, and will be borne out by observation and experience.

The ensuing chapter on nausea and vomiting, occupies eighteen pages, and presents a very complete digest of the present state of our knowledge in relation to the character and treatment of this, in many c tressing, and occasionally, even dangerous disorder of gestati

Among the means for arresting the vomiting enumerated by ill, he has not included kreasote, a third of a drop of which, or portion, diffused in water, we have found to be one of the mo and certain remedies, even in cases of very considerable violence.

Heartburn or cardialgia, cramp of the stomach, hæmatemesis, c pation and diarrhœa, are the subjects of the five succeeding chapters, of the leading particulars connected with each of which the author's summary will be found perfectly satisfactory.

The serious inconvenience which results from the excessive accumulation of fæces in the rectum that occasionally takes place, when no attention is paid to remedy the constipated condition of the bowels, so generally attendant upon gestation, as well as the proper measures to be taken, with the view to obviate or to remove such accumulations, are very fully noticed by Dr. Churchill, with references to the best authorities for more ample details.

A chapter on *icterus* concludes the author's account of the disorders of gestation implicating the chylopoietic viscera; in this, Dr. C. very properly points out the very great importance of distinguishing that form of jaundice which arises from sympathy with the pregnant uterus, or from mechanical obstruction, from that, especially, which is dependent upon inflammation.

> "Some females," he remarks, "acquire a dark, almost yellow, colour of skin during pregnancy, which must be carefully distinguished from the disease in question, as it is of no consequence, requiring no treatment, and disappearing after delivery."

Jaundice from hepatic inflammation or other serious disease of the liver, demands an active treatment, modified only by the existence of pregnancy, to prevent a fatal termination.

In regard to the disorders of the circulating system during gestation, Dr. C. remarks—

> "It cannot appear surprising that the circulating system should suffer derangement during pregnancy, if we recollect, that in addition to the direct effect produced upon it by the gravid uterus, it is also greatly influenced by the sympathetic irritations of other organs. Thus, even if it did not sympathize with the uterus, still it would be liable to disturbance from disordered stomach or bowels, or from impeded respiration. The influence of pregnancy, therefore, upon the heart's action, results from a combination of direct sympathy with the uterus, and with the disorders of other organs or systems."

Palpitation of the heart and *syncope* are the only diseases of the respiratory system noted by Dr. Churchill.

The first is of very common occurrence in pregnant females, especially those of a nervous or hysterical temperament, and is entirely unconnected with any organic disease of the heart. Although it may occasion some distress to the patient, when of any considerable violence, by impeding exercise and interrupting sleep, it is said seldom to be an affection of much moment.

Occasional attacks of syncope are mentioned by some of the writers on the diseases of females, as not an unusual occurrence during gestation, especially in weak and delicate women, about the time of quickening, as also immediately before or during labour. According to Dr. Churchill, the prognosis is only grave in those cases where the syncope is repeated or prolonged, accompanied with headache, or where there is evidence of organic disease. A very complete summary is given by our author of both these affections.

As the disorders of the respiratory system incident to gestation, Dr. C. enumerates *dyspnœa*, *cough*, and *hæmoptysis*. The *first* may attack females at any period of pregnancy; sometimes we find it during the early months, (*Capuron;*) in other cases about the period of quickening, (*Imbert;*) but most frequently during the latter months. (*Imbert, Burns, Campbell.*) The *second* symptom is described as sometimes connected with the first, but often independent of it. It occurs only in the earlier and latter months of pregnancy.

The dyspnœa is seldom a serious affection unless dependent upon some organic disease of one or other of the thoracic viscera; but the cough is considered by the majority of authorities as almost invariably attended with serious inconvenience or danger.

> "The loss of rest, headache, and pains, injure the health of the mother; and where the cough is violent and frequent, there is great probability of miscarriage or premature labour." (*Capuron*, &c.)

The summary of Dr. Churchill will be found sufficiently full and satisfactory in reference to both affections.

Hæmoptysis is described by Campbell, Imbert, Capuron, and Gardien, as of occasional occurrence during the earlier and later months of pregnancy. So serious is its occurrence viewed by the latter writer, that he considers it prudent to advise those who have suffered from a severe attack of it to avoid becoming mothers ever afterwards.

Under the head of disorders of the nervous system and senses, a short but sensible chapter is given on *insomnia*, which is a most common and distressing complaint, especially during the latter months of pregnancy. When slight and of short duration it is of minor importance, but when continued and obstinate, every judicious means should be adopted for its removal.

Of the hypochondriasis of pregnant females, a tolerably extended notice is given, chiefly from the works of Denman and Montgomery.

In the succeeding chapter the subject of headache, which is probably next to disturbance of the stomach, the most common complaint of pregnant women, receives the attention its importance demands; for although it may, in the generality of cases, be of no great consequence aside from the mere suffering of the patient, in others it is a symptom of a very serious character, especially when it is the precursor of the very formidable disease which forms the subject of the next chapter—namely, *convulsions.*

In describing this affection, Dr. Churchill has deviated somewhat from his general arrangement; including, in the same chapter, an account of the several varieties of convulsive disease occurring as well during parturition as pregnancy. The summary presented in relation to the pathology and treatment of these is of some extent, occupying twenty-nine pages; the text and notes exhibiting a very complete view of the present state of medical opinions in relation to the subject.

The author divides the convulsions of gestation and parturition into the hysteric the epileptic, and the apoplectic.

The first are confined to the period of gestation, and are more frequent during the early months than subsequently, and occur usually in females of a nervous or hysterical constitution.

The second, which is the most frequent variety, occurs ordinarily during labour, particularly in women of sanguine temperaments with short necks, and of short, square forms; they may, however, attach, also, during, especially, the two latter months of pregnancy, or not until some hours after the birth of the child.

The third variety of convulsions, seldom or never occurs except towards the termination or after the conclusion of labour. Burns, however, mentions its occurrence at the commencement, and Morithon and Menard at the sixth month of pregnancy.

The hysterical convulsions of pregnant women are seldom if ever fatal, or even do not seriously compromise the health of the patient. The epileptic form, the symptoms of which resemble very closely, if they be not identical with those of ordinary epilepsy, more generally occur in women with their first children.

> "The termination of the attack (of epileptic convulsions) varies in different patients; some remain in a state of half stupor and great exhaustion for hours or days, and gradually recover. In other cases, the patient becomes maniacal, and may remain so for a long time, and ultimately recover. (*Campbell.*) In a few cases, the patient continues comatose, and gradually passes into a state resembling apoplexy, and dies." (*Blundell.*)

According to our author, the cases where epileptic convulsions occur during labour, and continue afterwards, are the least manageable; next to these, the attacks during labour only; then those after delivery; and lastly, the most favourable are those which occur during gestation.

> "On the whole," he adds, "the mortality is considerable, though probably much less so than formerly. Jacob states that in his time scarcely any survived. Dr. Parr, in his Med. Dictionary, that six or seven out of ten die. Dr. Hunter, that the greater proportion were lost."

Out of 152 cases, occurring in the practice of twelve respectable practitioners, 42 terminated fatally, or more than one-fourth.

The following is Dr. Churchill's summary in relation to the pathology of epileptic convulsions:

> "In the majority of cases a *post mortem* examination affords but little information. In many instances there is no alteration whatever from the healthy state of the brain. (*Bouteilloux, La Chapelle, Cruveilhier, Baudelocque, Cinisclli, Collins, &c.*) Sometimes the vessels of the brain are turgid with blood, (*Denman, Davis,*) and in other cases there is a quantity of serum effused on the surface and base of the brain, or into the ventricles. (*Dugès, Collins, Merriman, Seibold.*) The heart is generally flaccid and empty, and the lungs of a pale colour. (*Denman.*) Some fluid is occasionally found in the pleura or pericardium. (*Seibold.*) Traces of inflammation have also been discovered in the peritoneum."

The treatment recommended by Dr. Churchill for this form of convulsions, is that which has received the sanction of the majority of our most authoritative practitioners; namely, extensive and repeated general bloodletting from the arm or temporal artery, followed by cups to the nape of the neck, active purgation, cold applications to the head, blisters to the head and nape of the neck; and where, after copious bleeding and purging, the attack has somewhat subsided, an opiate.

> "Considerable difference of opinion has existed upon this point, (the administration of an opiate,) owing, Dr. C. thinks, to the different parties not specifying with sufficient accuracy the time at which it should be administered, and the cases suitable for it. Under the circumstances I have mentioned, it seems to be the opinion of the highest authorities that it may be of service. (*Denman, Davis, Ramsbotham, Collins.*) Calomel, given so as to affect the constitution, has been found beneficial. Dr. Collins speaks very highly of tartar emetic, in doses sufficient to produce nausea, but not vomiting."

To the question—Are we, in cases of convulsions, to interfere with the progress of gestation or parturition?—Dr. Churchill replies, that until labour sets in naturally, there is no dispute that interference would be injurious. When the os uteri is dilated or dilatable, he advises the membranes to be ruptured, which sometimes advances the progress of the labour. Version or turning he considers a most hazardous measure. Whenever, however, the head has descended into the pelvis, and there is sufficient space, he considers it will be proper to effect the delivery by the forceps.

In regard to the pathology of *apoplectic* convulsions, or rather of that state of deep coma or of genuine apoplexy, which occasionally occurs towards the close or after the termination of labour, and which, according to our author, is evidently caused by the stress upon the cerebral vessels during the pains of parturition, we are presented with the following summary:

> "The brain may be found greatly congested, but without any effusion; but this I believe to be rare. There may be great effusion of serum, which, by its pressure, will cause symptoms of apoplexy, (*Dugès*,) more frequently blood is poured out into the ventricles into the substance of the brain, or at its base. Cases of this kind have been noticed by *Denman, Targioni, Marchais, La Chapelle, Leloutre, Schedel,* and *Velpeau.*"

The prognosis is generally unfavourable. The treatment differs in nothing from that proper in ordinary cases of apoplexy.

An excellent chapter is given on the nervous affections of the eyes and ears, and another on the painful state of the mammæ occasionally observed in pregnant females.

The section on the disorders of gestation arising from mechanical pressure or distension, embraces hernia, hæmorrhoids, spasm of the ureters, incontinency and retention of urine, cramps, spasms, and irregular pains of the lower portion of the body, varicose veins, œdema, ascites and hydrothorax. In reference to each of these affections, the author's summary is particularly happy, embracing a concise notice of nearly every important fact recorded by the leading medical authorities, as well continental as British. The pathological and therapeutical views advocated by Dr. Churchill, are in general sound and judicious, and the notes appended to the text of the respective chapters, particularly interesting and instructive.

The second part of the present volume is devoted to observations on the diseases incident to child-bed. The author describes first, those diseases and accidents which affect the uterine system; then those which seem to be propagated from it; and lastly, certain febrile affections and disorders of the breast. But, in order that the limits of disease may be more perfectly defined, he has prefixed a very able notice of the ordinary phenomena of convalescence, and of certain variations therefrom, not involving organic disease, with some judicious directions for the management of pregnant females.

In the first chapter of the introductory matter, Dr. Churchill examines in detail the condition of the nervous system, the state of the circulation and respiration, the state of the uterus, vagina, &c.; the occurrence of after pains, the lochial discharge, the state of the normal secretions and excretions, and the secretion of the milk, during convalescency from a natural, easy labour, occurring in a strong and healthy woman. The second chapter treats of the general management of puerperal females, under the ordinary favourable circumstances; and the third chapter is devoted to the consideration of certain deviations from the normal course of convalescence, which are either merely temporary or eventuate in serious disease; together with directions for their proper management.

The whole of the observations contained in these chapters are in the highest degree important and judicious, and deserve an attentive perusal on the part especially of young practitioners. We are persuaded, that the actual condition of the puerperal female, after even the most natural labour, is by many but imperfectly understood; and that much, often irreparable injury is done by mismanagement; either, on the one hand, from mistaking ordinary phenomena for those of disease, and unnecessarily interfering with the view to their removal, or, on the other, from overlooking entirely important deviations from the usual course of convalescency until actual disease sets in.

Of the sanguineous tumour of the labiæ, Dr. Churchill presents a very interesting historical summary, and a good digest of its pathology and treatment.

Inflammation of the vagina, the disease next described, is important, not so much from the frequency of its occurrence, its severer forms being almost exclusively confined to cases of tedious labour and of malpresentations, but from its liability to a very unfavourable termination when it does take place, and is overlooked or improperly treated in its early stages. Vaginal inflammation subsequent to labour, is the most usual cause of vesicovaginal fistula. The author has presented a very accurate history of the disease and of its appropriate management.

The subject of puerperal fever, which follows, receives all the attention which its importance merits, as well in consideration of its frequency, and the danger invariably attendant upon it, as of the obscurity in which pathology is involved, and the differences of opinion which exist in regard to its treatment.

Dr. Churchill precedes his description of the disease by a brief, but highly interesting notice of its literary history and of its several visitations as an epidemic. From this sketch, he remarks:—

> "It is evident that the disease prevails more extensively and is more virulent in hospitals. It is every where more frequent among the lower classes than the higher. In Dublin this is even more remarkably the case than in London.
>
> "That the cause of its prevalence in lying-in hospitals is the number of patients in a ward, the want of proper ventilation, and the too rapid succession of fresh patients before the wards have been properly cleansed, is rendered almost certain by the success which has followed attempts at remedying these evils."

For the purpose of giving a more distinct view of the prevalence of puerperal fever, the author has presented, in a tabular form, a chronological list of the different epidemics, with the names of the authors by whom they are noticed or described, and the pathological characters when ascertained.

He next enumerates the various opinions in regard to the pathology of puerperal fever, with the names of the several authorities by which each is advanced or advocated. From which we learn that, by Hippocrates, Galen, Celsus, Ætius, Paulus Avicenna, Raynalde, F. Plater, Sennert, Riverius, Sylvius, Strother, Mauriceau, La Motte, Sydenham, Boerhaave, Van Sweiten, Hoffman, Jussieu, Villars, Astruc, Pouteau, and Denman, the disease is regarded as an *Inflammation of the Uterus.* By Hulme, Leake, and La Roche, as an *Inflammation of the Omentum and Intestines.* By Waller, Johnson, Forster, Cruikshank, Bichat, Pinel, Gardien, Capuron, Gordon, Hey, Armstrong, Clarke, Campbell, and Collins, as *Peritonitis.* By Pouteau, Home, Lowder, Young, Abercrombie, Gordon, Armstrong, Hey, and Campbell, as *Peritonitis, connected with Erysipelas, or of an Erysipelatous character.* By Willis, Puzos, Levret, Doublet, and Hamilton, as a *Fever af a peculiar character.* By Peu, Tissot, Le Roi, and White, as a *Disorder of a putrid nature.* By Petit, Sellè, Kirkland, Walsh, Tenon, Tonnelaè, Lee, and Ferguson, as a *Disease of a complicated character.*

After this we are presented with a list of the *causes* assigned by different authors, for the production of puerperal fever; upon these the author remarks as follows:

> "We cannot regard difficult labour as a frequent cause, though the condition in which the woman is left, will undoubtedly render her more obnoxious to the epidemic. Mental emotion is undoubtedly an efficient predisposing cause. Under its influence, females are peculiarly exposed to puerperal fever, and are rendered less able to bear it. Several of the worst cases I have ever seen were evidently attributable to this cause. Cold may be fairly admitted into this list. Whether portions of placenta remaining in the uterus, give rise to this disease, is as yet doubtful; I am inclined to think they may, but it is difficult to decide between the conflicting evidence. Irritation of the intestines may certainly be propagated to the neighbouring tissues, and, under the influence of an epidemic, may originate puerperal fever.
>
> "That hæmorrhage, during or after labour, does not prevent puerperal fever, there is abundant proof; but that it renders the patient more liable to it may be questioned. To a certain extent, atmospheric influence has a control over the disease; in damp, moist weather it is much more prevalent, and less so, in warm dry weather."

Several tables are given from the observations of Drs. Gordon, Campbell, Ferguson, Dugès, and Delaroche, extending through a number of years, from which it is shown, that the most injurious months in *Aberdeen* were October, December, November; in *London*, January, March, February, December, May; in *Paris*, November, October, February; in *Geneva*, January, March, February.

> "In general, the cold months are most fatal. No death has occurred in the month of July in the General Lying-in Hospital. The most favourable month in Paris and Geneva is June, and August in Scotland, where the summer is about three weeks later than in England. Hence we may say, that the warm months are beneficial." (*Ferguson.*)
>
> "Whatever," remarks Dr. Churchill, "the epidemic influence may be, there can be no doubt, that to it *the majority* of cases are attributable, especially the worst and most fatal.

> "Much has been written concerning the *contagion* or *non-contagion* of puerperal fever. Drs. Hulme, Hall, and Campbell, MM. Tonnellé and Dugès, &c., are in favor of the latter opinion, and Drs. Gordon, Hey, Walsh, Burns, Armstrong, Douglass, Robertson, Hamilton, &c., of the former. In all diseases which are epidemic, it is extremely difficult to decide upon the question of contagion, inasmuch as the cases which support most strongly the contagiousness of the disease, may almost all be explained by the prevalence of the epidemic cause. Nevertheless, there are some cases so marked, that I should feel scarcely justified in denying that puerperal fever is occasionally communicated by contagion."

After an enumeration of the forms of puerperal fever, according to the classification of Douglass, Tonnellè, Maeteus, Vigarous, Gardiner, Gooch, Blundell, John Clarke, Lee, and Ferguson, our author remarks as follows:—

> "It appears to me, that neither of these methods is altogether free from objections; but, upon the whole, I prefer the plan adopted by Dr. John Clarke and Dr. Robert Lee, of making the local affection the basis of arrangement—as at least developing most strongly the essential facts of the disease. The great defect of this plan is the coincidence of the diseases, which it places separately; thus hysteritis, and affections of the ovaries, &c., are very often accompanied by peritonitis. Still, however, there is a broad line of distinction between them in many epidemics, and I must only guard against the defective arrangement, by stating strongly at the commencement, that it is not intended to describe the varieties as necessarily and widely distinct, as to symptoms and causes, in every epidemic; and in the course of my descriptions, endeavour to point out the occurrence of the different local affections.
>
> "I shall thus divide puerperal fever, according to the predominant local affections, into five varieties, which I have placed in the order of frequency of occurrence. 1. Peritonitis. 2. Hysteritis. 3. Inflammation of uterine appendages. 4. Uterine phlebitis. 5. Inflammation of absorbents."

In 222 cases, Tonnellè found *Peritonitis* in 193; alterations of uterus and appendages in 197; combined lesions of uterus and peritoneum in 165; peritoneum alone affected, in 28; uterus alone, in 29.

In 266 cases, according to Dugès, the uterus was affected 3 cases in 4; ovaries 1 in 7; perforation of stomach 10 in 266; Inflammation of stomach and intestines 4 in 266; pleuritis, single and double, 40 in 266; Pericarditis 6 in 266; arachnitis 1 in 266; purulent deposit in muscles 8 in 266.

Puerperal peritonitis was the form of the disease observed in the epidemics in London, at Aberdeen, Leeds, Edinburgh, and Dublin; and it has occurred in other epidemics. The inflammation appears to affect the peritoneum covering the uterus primarily, and to extend from thence to the remaining portion of the serous membrane, involving not unfrequently the uterine appendages.

In this form of the disease, the general prognosis, Dr. C. remarks, is unfavourable, even in sporadic cases, but still more so when the disease is epidemic.

> "Dr. Hulme declares it to be as bad as the plague. Dr. Leake lost 13 cases out of 19; Dr. W. Hunter, 31 out of 32; Dr. Clarke, 21 out of 28; Dr. Gordon, 28 out of 77; Dr. Campbell, 22 out of 79; Dr. Armstrong, 4 out of 44; Dr. Lee, 40 out of 100; Dr. Collins, 56 out of 88; Dr. Ferguson, 68 out of 205. In the epidemic in Paris, (1746,) in Edinburgh, (1773,) and in Vienna, (1795,) none recovered."
>
> "If we take the results of treatment adopted in various puerperal epidemics, by various practitioners, we shall find that, on a large scale, one in every three

will die, with all the resources which medicine at present offers. To save two out of three, then, may be termed good practice in an epidemic disease." *Ferguson.*

Inflammation of the uterine appendages are often conjoined in puerperal fever with peritonitis, but, according to Dr. C., there are cases in which they exist alone, or predominate in a striking manner, or where the consequences of the disease continue longer in these parts. This is proved by the observations of Puzos, Levret, Husson, and Dance. M. Tonnellè found 58 cases of inflammation of the ovary and 4 of abscess, out of 190 cases of puerpeial fever.

"*Hysteritis.*—Inflammation affecting the proper tissues of the uterus, has been frequently described. It is mentioned by Astruc, Vigarous, and Primrose. Pouteau met with it in the epidemic of 1750. Böer, and Richter, have termed it *Putrescirung* or *Putrescenz dèr Gebarmütter*, and Smith, Danyau, and Tonnellè, have recorded cases of it.

"In certain epidemics, it is by no means unfrequent. Out of 222 fatal cases of puerperal fever, M. Tonnellè found *simple metritis* in 79—*superficial softening* in 29, and *deep softening* in 20. M. Dugès found the womb affected in 3 cases out of 4; Dr. Robert Lee states that in 45 dissections, the muscular coat of the uterus was softened in 10 cases." p. 335.

"*Uterine Phlebitis.*—This form of disease has been frequently noticed by authors; amongst others, by Dr. I. Clarke, Mr. Waller, Mechel, Ribes, Louis, Dance, Tonnellè, John Clarke, Burns, Lee, Boivin, Dugès, Ferguson, &c., and recently, in a series of papers on metro-peritonitis, by M. Nonat. Nor is it very rare, for M. Tonnellè found pus in the veins in 93 cases, and in the thoracic duct in 3 cases out of 134; and Dr. Robert Lee, in 45 cases, had 24 of uterine phlebitis." p. 342, 3.

"*Inflammation of the Uterine Lymphatics.*—This variety of puerperal affection was first noticed in France by M. Dance, and since by Boivin and Dugès, Tonnellè, Duplay, Cruveilhier, and Nonat; the former found pus in the lymphatics in 32 cases, and in the thoracic duct in 3. In England, it was first recorded by Dr. R. Lee." p. 351, 2.

The short notice we have thus given of a few of the facts contained in Dr. Churchill's chapter on puerperal fever, will give our readers some imperfect idea of the vast amount of information it embraces. There is no point of interest connected with this formidable malady that is left unnoticed. The text, in connection with the notes, presents, unquestionably, one of the most able and instructive digests of the history, pathology, and therapeutics of puerperal fever extant; while the copious references that are given will facilitate the labours of such as desire to investigate more fully the facts, observations, and opinions of the several writers, as well ancient as modern, who treat of the disease.

This chapter alone ought to command for the work a prominent place in the library of every physician.

Equally able summaries are given in the three succeeding chapters of the causes, varieties, morbid anatomy, symptoms and treatment of rupture of the uterus and vagina, vesico and recto-vaginal fistula and laceration of the perineum.

In relation to the last mentioned accident, Dr. Churchill has shown by a detail of the several causes which are known to produce or predispose to it, that although much may be done in the conducting of a labour, to diminish the liability of its occurrence, while, in some cases, it is directly attributable to mismanagement on the part of the accoucheur, it, nevertheless, is not always in our power to prevent it taking place. He very properly remarks, that the support given to the perineum by the physician during the passage of the child's head is frequently carried to excess, and produces the very accident it is intended to prevent.

> "It should," he adds, "be moderate and gentle—just so much as to support the parts, but no more. I must altogether object to any attempts to retard the passage of the child, as erroneous in theory, and mischievous in practice."

Chapter the tenth treats of Phlegmasia alba Dolens. In relation to the much disputed question as to its true pathology, Dr C. remarks as follows:—

> "It is evident, that if we take pathological anatomy for our guide, we must conclude the disease to consist in inflammation of the veins of the lower extremities, in many cases propagated from the veins of the uterus, and that the interruption of the circulation through these vessels gives rise to the effusion of serum in the cellular tissue. This view also derives some support from the phenomena which result from phlebitis in other situations. At the same time, it is not impossible that some further information may be necessary, before we fully comprehend the true theory of the disease.
>
> "The exciting cause is generally the impression of cold; and if Dr. Lee's views be of general application, we may add disease of the uterus, especially of that part to which the placenta is attached." p. 419.

The treatment laid down by the author consists in venesection in violent cases; the application of leeches, followed by poultices, along the course of the femoral vein, to the groins or to the calf of the leg, repeated as circumstances may demand; purgatives, especially the saline, with small doses of tartar emetic; when diarrhœa is not present, saline effervescing draughts; blisters; turpentine fomentations; and, to relieve severe pain, irritability, and restlessness, and to procure sleep, opiates, with a bland farinaceous diet; when the acute stage has terminated, gentle support to the limb, by means of a flannel bandage; slightly stimulating friction; the application of small blisters; tonics, as bark, quinine, or sulphuric acid, with improved diet; meat and a moderate portion of malt liquor or wine.

The remaining diseases treated of are puerperal mania, ephemeral fever, miliary fever, sore nipples, and inflammation and abscess of the mammæ; of each of which Dr. Churchill has presented a very excellent account.

In closing our somewhat imperfect notice of the volume before us, we have only to reiterate the commendations we have already bestowed on it. We have seldom had the satisfaction of perusing a medical work of the same class more creditable to the author, from the judiciousness of its arrangement, the amount and accuracy of the information it contains, and the general perspicuity of its style, or one better calculated to convey positive instruction to the reader. D. F. C.

Art. XIII. *The Library of Practical Medicine.—A System of Practical Medicine, comprised in a Series of original Dissertations.* Arranged and edited by Alexander Tweedie, M. D., F. R. S. *Diseases of the Nervous System.* With American Notes and Additions, by W. W. Gerhard, M. D., &c., &c. Philadelphia, 1840. Lea & Blanchard. 8vo. pp. 551.

This volume forms the second of a series now in the progress of publication, under the general title of the Library of Medicine, the first of which was noticed in our number for August last. Whether considered as a whole, or in reference to the separate dissertations of which it is composed, it is unquestionably a work of a very high character, furnishing one of the best digests, if not the best, that has yet appeared, of the actual state of medical information and experience, in relation to each of the diseases of which it treats, in a form at once succinct and perspicuous; and in common with the preceding volume of the series, it offers strong claims to a prominent place in the library of every physician. For the student, it affords a very excellent and accurate guide to a knowledge of an important, but, in many respects, obscure class of diseases; the young practitioner will find in it a useful summary of pathological and therapeutical facts, which it would be extremely difficult to acquire from any other source; while even those who are more advanced in the profession, will be enabled, by a comparison of the results of their own experience with the general view here presented of that of the great body of medical observers throughout the world, to correct or confirm, in many instances, their own individual observations.

The account of the nervous affections, is prefaced by some general observations, by Dr. J. H. Bennett, on the anatomy, physiology, and pathology of the nervous system. The observations are well adapted to recall to the mind of the reader, the leading particulars in relation to those subjects, preparatory to his entering upon the special pathology of the several portions of the system; in other words, of the history, character and causes of the individual affections of which the nervous system may be the seat.

The fault of this introductory section, is its too great conciseness. When we reflect upon the very striking discoveries that have, of late years, been made in regard to the anatomy and physiology of the nervous system, and the light that has, in consequence, been thrown upon its general pathology, and at the same time, take into consideration the class of readers by which the work before us will be the most frequently consulted;—to whose instruction it is, in fact, mainly adapted, we are convinced that a more extended notice of many of the leading points alluded to in this introductory section, would have greatly facilitated a correct appreciation of some at least, of the important pathological and therapeutical views inculcated in the succeeding chapters.

The observations presented in the introductory section are, in general, sufficiently clear and accurate. We cannot, it is true, accede to the soundness of all the pathological opinions advanced by Dr. Bennett. We do not acknowledge, with him, that "innumerable facts prove that pressure" acting upon the nervous structure, "is capable of producing all those phenomena" of disease which occur and are dissipated with striking rapidity;—

those "which are confined to one part of the nervous system and not to others," and neither of which leaves any appreciable trace of their existence after death; as well as those paroxysmal attacks which occur in cases of tumours and other organic alterations of the brain, &c.

We admit, nevertheless, that the inferences and therapeutical directions based by the author upon his somewhat mechanical views of pathology, are not calculated very materially to mislead.

The subject of *inflammation of the brain*, is treated in a masterly manner in a dissertation, by Dr. James Hope of St. George's Hospital, London.

After pointing out the very great obscurity of the diseases of the brain generally, and hinting at some of the principal causes to which this obscurity is to be attributed, and which will probably prevent it from being, ever, entirely removed, the author describes at some length, the precursory symptoms of inflammation of the brain. These, as Dr. Hope very justly remarks, demand especial attention, from their constituting several groups of affections troublesome in themselves, formidable in their consequences, and by the early removal of which, disease of a more formidable and intractable nature may often be prevented.

The subject is considered under the several heads of Cerebral determination and congestion;—Cerebral congestion from debility and inanimation, and Cerebral irritation, determination and congestion, in infants and children.

According to Dr. Hope, "it may be stated in general terms,—1. That the symptoms of active determination are those of excitement or exaltation of the cerebral functions—since there is increased arterial action, yet not congestion enough to obstruct the circulation and occasion the opposite train of symptoms. 2. That the symptoms of active or arterial congestion, are those of depression of the cerebral functions—because, here, the disease has proceeded to the extent of occasioning an obstruction of the circulation. 3. That the symptoms of passive or venous congestion, are likewise those of depression of the cerebral functions—because, here, also, there exists an obstruction to the circulation. Now, the three states in question are often the precursors both of inflammation of the brain, in any of its forms, and of apoplexy and palsy; nor can we always determine, in individual instances, why they conduce to the one rather than the other; but we think it true, as a general rule, that increased determination, implying augmented arterial action, is equally productive of inflammation and of apoplexy and palsy; while congestion, especially the passive form, is more allied to apoplexy and palsy than to inflammation. So formidable are their consequences, whether of one kind or the other, that the states conducing to them, must be looked upon as serious maladies; and it is important to the student to know, that in practice, he will encounter an incomparably greater number of 'determinations,' and 'congestions,'—in other words, of precursory symptoms, than of actual inflammations, apoplexies and palsies."

Although in a formal review of Dr. Hope's dissertation, objections might be urged to the accuracy of some of the terms he makes use of, yet the correctness of his leading views, in relation to the precursory phenomena of inflammation of the brain, will scarcely be called in question. The whole of the author's remarks on this subject, are, certainly, in the highest degree important, while his practical directions deserve the closest attention. His description of the congestion of the brain, connected with debility and inanition, and his directions for its management, are particularly interesting. Of the frequent occurrence of this form of cerebral congestion, whatever difference of opinion may exist as to its true pathology, there can be no doubt. In this country it has, it is true, been too generally overlooked, and we fear, that, in consequence, many lives have been sacrificed, by resorting in its treatment, to active depletory remedies.

Not less important are the remarks of Dr. Hope in relation to cerebral irritation, determination and congestion, in infants and children—a very common form of disease in early life, and to which no inconsiderable amount of experience in the treatment of the affections of young children, has taught us the importance of prompt and close attention.

The description given by the author of this affection, whether attended by symptoms of excitement or of depression; his account of its causes or pathology, and its terminations, as well as the rules laid down by him for its treatment, are clear and accurate. They are evidently the result of close observation and ample experience.

The several forms of inflammation of the brain, are treated of under the head of 1. *inflammation of the dura mater;* which almost invariably occurs as a secondary affection, from disease of the brain extending inwards, or abscess of the brain extending outwards. 2. *meningitis;* which term, after a rapid review of the facts recorded by various writers, Dr. Hope considers himself warranted in applying "to inflammation of the arachnoid and pia mater conjointly, since the two membranes are almost always simultaneously affected, and the symptoms are not distinguishable during life.

Meningitis he describes under two general forms, acute and chronic—Acute meningitis of the superior surface of the hemispheres he assumes as the type, because it is the most common form in adult subjects, though it occurs also in children.

As varieties of acute meningitis we have *Phrenitis;* or meningitis affecting a great extent of the superior surface of both hemispheres, and in some cases involving the surface of the brain in the inflammation; and *Meningo-Cerebritis*, in which there co-exists not merely superficial but deep and extensive cerebritis.

The third form of inflammation of the brain described by Dr. Hope is cerebritis, or inflammation of the substance of the brain—which may be acute, and either general or partial, or chronic, which is always partial.

Under the head of *Chronic Cerebritis* the author notices very concisely the subject of intermittent inflammation of the brain—in explanation of the phenomena of which he offers the following hypothesis:

> "It is known that inflammation of the brain sometimes steals on so slowly and insidiously, especially in aged persons and weakly constitutions, and to produce comparatively slight symptoms, though serious disease be in progress. Supposing intermittent fever to be superadded to such a case, it is intelligible that the intermissions might be exempted from delirium, coma, and any marked degree of fever; whereas, the supervention of the paroxysm, by congesting the brain in common with all the other internal organs, would furnish an additional source of irritation, sufficient to impart an acute character to the cerebral symptoms, and produce delirium, convulsions, and coma. We have more than once witnessed this train of phenomena in the pernicious intermittent fevers of Rome complicated with cerebral inflammation, and have seen such cases successfully treated by large doses of quinine every two or four hours, in conjunction with an antiphlogistic treatment addressed to the head. The explanation now offered is still more intelligible in reference to chronic inflammation of the brain, and it is principally this which presents the intermittent character. It will hereafter

be seen that organic diseases of the brain may also be intermittent, and that an analagous explanation applies to them."

The above is, we confess, a very ingenious mode of accounting for the occurrence of intermittent inflammation of the brain; it does not appear to us, however, to be in any degree satisfactory, but rather to render more obscure a subject that was sufficiently so before.

There is much looseness of expression in the whole of the paragraph just quoted, that we had not expected to meet with in a dissertation marked so generally with precision and accuracy. To adduce one striking example, the author refers in the last sentence to the intermitting character of certain forms of "organic disease of the brain," meaning by this latter term disease attended with appreciable change of the cerebral structure—while, in fact, in the cases alluded to the organic disease is permanent, the paroxysmal character belonging only to certain of the phenomena by which they are occasionally attended.

In Dr. Hope's description of the anatomical character of cerebritis—softening, suppuration, abscess, and induration of the brain—of the comparative frequency of the several forms of cerebral inflammation; their exciting causes, diagnosis and prognosis, will be found a rapid but satisfactory sketch of all the prominent facts and observations connected with those subjects, while his account of the treatment of the acute as well as chronic forms of cerebritis, embraces an exposition of the result of the experience of the most distinguished of the medical authorities of Europe, compared with that of the writer's own clinical observations.

The dissertation closes with some important and very pertinent remarks on the character and treatment of those cerebral symptoms from exhaustion, resembling inflammation of the brain, to which the term hydrencephaloid disease, or spurious hydrocephalus, has been applied.

Hydrocephalus is the subject of the succeeding chapter. The account of this affection is by Dr. Bennett. The description he has given of its invasion, progress and terminations corresponds with the observations of the best writers upon the disease. His remarks upon the different forms under which it occurs when acute, will be found very generally correct, while the account he presents of the anatomical characters observed after death, affords a very accurate abstract of the facts recorded by the more ancient as well as modern authorities. The various causes of hydrocephalus and their relative importance are correctly stated, and a very excellent account is given of the experience of the leading physicians who treat of the disease, in regard to the efficacy of the various remedial agents that have been employed for its cure.

In relation to the true pathology of hydrocephalus, the note appended to the chapter by the American editor is particularly interesting. Dr. Gerhard shows, by reference to facts of every conclusive character, founded upon numerous observations made by himself and Dr. Rufz at the children's hospital at Paris, during the years 1832 and 1833, that the disease

> "Is a sub-acute inflammation of the membranes, and often of the substance of the brain, which is more frequent in children than in adults, and nearly always connected with a deposit of tuberculous granulations. The sub-acute inflammation of the membranes, without this tuberculous deposit, is so rare that the exceptions need scarcely be regarded, especially in children. The disease is, therefore, a tuberculous one, and, like all affections of the same class, it is often connected with the same lesion in other parts of the body; that is, the formation

> of scrofulous or external tubercles, and of pulmonary phthisis. The reason that scrofulous children, or adults labouring under phthisis, should be peculiarly liable to the disease, is readily explained. It is a mere dependence upon the general tuberculous diathesis. The forms of the tuberculous disease which precede its development in the membranes of the brain, vary with the disposition to them, which exists in particular ages of life,—thus, in children, the lymphatic ganglia are most frequently affected, and in adults it nearly always follows consumption of the lungs, and then it carries off the patient much before the ordinary termination of the disease. The granulations which are formed in the membranes, do not, in the large majority of cases, precede the inflammatory affection. If they are of extremely small size, the regularity of form and the proportion which generally exists between the numbers of the granulations and the degree of the inflammation, show that the same morbid action caused the deposit of the tuberculous substance, and of the ordinary products of inflammation. In many cases the same process occurs simultaneously in other serous membranes, as the pleura and peritoneum, and the same progress of inflammation and tuberculation takes place. This simultaneous action often occurs in the serous membranes, without those of the brain being involved, and we therefore infer that the disease is the same in both instances, although its seat is different. It is only in exceptional cases that the larger size and more complete formation of the tubercles authorise us to conclude that they were deposited previously to the inflammation, and acted merely as exciting bodies in forming its development."
>
> "The difference between the description of the disease as adopted by Dr. Rufz and myself, and that retained in the text of the work, is simply this: After we had ascertained the regular coincidence between the intractable variety of the disease, so well known at the children's hospital, and the tuberculous affections, we classed it amongst them, because it is this common type that renders the disease, when partly formed, as difficult to arrest as other diseases of the same nature, and which furnishes us with the only rational means of prophylaxis, if not of cure. The subsequent observations of others, who have practically studied the same subject, have so fully confirmed our statements, that the term *tuberculous meningitis* is entering more and more frequently into the received nosological arrangements."

Of the correctness of the pathology here given of that form of disease which is properly designated by the term hydrocephalus, our own observations have afforded us ample evidence. We are not aware that the general recognition of Dr. Gerhard's views of the nature of the disease, supported as they are by the results of numerous autopsical examinations, will have the effect of introducing any very important modification in its treatment, or any very decided diminution of its mortality. It will, however, serve to render our diagnosis more accurate, and, by pointing out the proper prophylactic measures to be adopted, enable us in many instances effectually to prevent the occurrence of the disease.

The account of the history, pathology, and treatment of *apoplexy* is by Dr. Bennett. A very clear and accurate abstract is presented by him of all the important facts known in relation to the phenomena and etiology of the disease—and under the several heads of 1. Transient or fugitive apoplexy; 2. Sudden or primary apoplexy; 3. Ingravescent apoplexy; and 4. Paraplexia, or apoplexy complicated with paralysis, a very correct and intelligible account is given of the different forms under which the affection may present itself; founded upon the repeated observations of the most eminent practitioners. The anatomical characters of the disease are correctly enumerated, but with somewhat less definiteness in one or two particulars than could have been desired.

The views of the pathology of apoplexy advanced by Dr. Bennett, are such as are fully established by a comparison of the symptoms of the disease in its different forms, with the lesions discoverable in the brain after death, and with the best authenticated facts connected with the general physiology and pathology of the nervous system. In common with the most authoritative writers on apoplexy, he refers the comatose and convulsive or spasmodic phenomena to pressure upon the cerebral structure and the persistent paralysis to which the apoplectic seizure so frequently gives rise to rupture, to effusions of blood, or to disorganization of certain portions of the substance of the brain.

The following remarks of Dr. Bennett are deserving of particular attention, not merely as explanatory of the true character of some of the forms of apoplexy, but in consequence of the very important bearing they have upon the prophylaxis and treatment of the disease in certain cases of not unfrequent occurrence.

> "How are we to attribute apoplexy to pressure in those cases where no morbid lesion can be discovered? When an individual, who is intoxicated, falls down suddenly without consciousness, we observe the pulse bounding, the countenance flushed, and the heart's action increased—circumstances which occasion distension of the arteries within the cranium, and corresponding compression of the veins. On the other hand, when a person falls down in a state of syncope, the pulse is feeble, the face pallid, and the heart's action depressed or scarcely perceptible—circumstances which indicate an accumulation of blood in the veins, and a proportionate diminution of the calibre of the arteries. In either case, owing to the peculiarities of the circulation within the cranium, pressure is exerted on the brain. Hence syncope differs from apoplexy only in the extreme feebleness of the heart's action, the cause producing loss of consciousness, sensation, and motion, being the same in both. Indeed it is sometimes difficult to distinguish these states from each other, the pulse in many cases of apoplexy being small and irregular, while a different treatment is required in such cases from those in which it is strong. Thus, either from increased or diminished action of the heart, pressure on the brain may be produced by over distension of its vessels with arterial or venous blood. After death, of course, this is not to be detected; the tonic contraction of the arteries is alone sufficient to empty them of their contents, and turgidity of the veins may remain or not according to the symptoms immediately preceding death, and the position in which the body is placed. Obstruction of the circulation may occasion effusion of serum in so great a quantity that a portion of it may be detected after death, or this may be so small as to be immediately absorbed when the circumstances which produced it have ceased. Now, in the living state, the congestion may be greater in one portion of the brain than in another; and hence may arise different symptoms in conjunction with those of apoplexy, as paralysis or convulsions, according to the situation or nature of the pressure. Such we consider to be the pathological condition of the brain in those cases where no morbid lesion can be discovered after death."

The therapeutical directions of Dr. Bennett are, generally speaking, judicious, being founded as well upon the pathological views adopted by him of the pathology of the disease, as upon the result of general experience. In the treatment of cases evidently connected with diminished action of the heart, and in which no indications exist of active cerebral congestion, general depletion by the lancet and by purgatives, probably, even local bloodletting, is inadmissible, but, even under such circumstances, we cannot agree with the author as to the propriety of diffusible stimulants, and especially of those which have a direct action upon the brain:—with

Dr. Gerhard, who has appended to the present chapter a very excellent note, we consider that in such cases—

> "The best means of treatment are stimulating revulsives, such as terebenthinate injections and sinapisms; internal stimulants, which have a direct action upon the brain should be used with much caution. If decided vascular reaction should occur. the usual means of treatment may be resorted to, but in these cases the blood-letting should be chiefly local."

The subject of *insanity* is next treated of, under the heads of general or incoherent insanity, including mania and dementia, moral insanity—monomania and melancholy—instinctive madness or insane impulse, including homicidal impulse, pyromania, suicide and other morbid propensities—hypochondriasis, and puerperal insanity.

The description of these several forms of insanity—of their progress and terminations, their anatomical characters, diagnosis, causes and treatment, remedial and moral, is from the pen of Dr. Pritchard, who is so generally known as an able writer upon the subject of mental derangement, and one practically conversant with it, as to render it scarcely necessary for us to point out the perspicuous and skilful manner in which the present digest of the more prominent pathological and therapeutical facts in reference to the various forms of mental disease has been prepared. We are certainly acquainted with no dissertation upon the subject, which presents in so concise a form, an equal amount of exact and useful information—or which forms a better introduction to the more detailed study of these affections.

The chapter on *Delirium Tremens* by Dr. Bennett presents a very excellent essay on the history, causes, symptoms, and treatment of the disease; it offers by no means, however, so able a digest of the facts and observations upon record in relation to its pathology, and the remedies best adapted for its cure as we could desire. To say nothing of the several essays on the disease that have appeared in this country, many of which comprise, certainly, observations of an important practical character, the continental physicians, especially those of Germany, have studied the disease with considerable attention, and have recorded many interesting facts in relation to it, pathological as well as therapeutical—these Dr. Bennett has strangely overlooked—not the slightest allusion being made to them in the chapter before us. The work especially, of Dr. Barkhausen of Bremen on delirium tremens, furnishes many interesting facts, the result of careful observations made under the most favourable circumstances, a notice of which was to be anticipated in a work which professes to "embody a condensed, yet ample view of the present state of the science of medicine."

We have no particular objections to make either to the leading views advanced by Dr. Bennett, of the nature of delirium tremens, or to the general directions given by him for its treatment. We should have been better satisfied, however, had he discriminated with more precision the several forms under which the disease may present itself, and the modification in the treatment which each demands.

The principal errors into which physicians have been led in regard to the pathology and treatment of delirium tremens, appears to us to have arisen from the fact being overlooked, that while the peculiar group of symptoms constituting this affection—those which result simply from the indirect debility and derangement of function consequent upon over-stimulation of the brain and nervous system by alcoholic potations—may in many instances be the only disease under which the patient labours; these symptoms often occur, also, as Von Roos and other writers have clearly shown, in conjunction with congestion or even inflammation of the brain or of its membranes, and with various other morbid conditions of that as well as of the residue of the organs: consequently, that while, under all circumstances, the proper symptoms of delirium tremens may call for their appropriate remedies—the pathological state of the brain with which these symptoms are associated, requires not unfrequently, that they should be withheld until the latter are removed, or at least that the remedies which these indicate, should be employed in conjunction with them.

In a long and interesting note to the present chapter, Dr. Gerhard has presented some judicious remarks upon the character and phenomena of delirium tremens, which correspond with the views expressed by the best writers on the subject, and the general accuracy of which will be recognized by every one who has had an opportunity of attentively studying the disease. The plan of treatment recommended by this gentleman for the removal of the proper symptoms of delirium tremens, and which he appears to pursue in all cases, even when the presence of some acute affection of the brain, lungs, stomach, &c , requires the administration of its appropriate remedies, is to place the patient under the influence of stimulants, particularly alcoholic liquors:—

> "The rationale," he observes, "of this practice is evident enough; the excessive stimulation to which these patients have been long subjected is not only followed by a subsequent depression, but is attended with an extreme disorder of the nervous system, which constitutes the essential character of the disease. The stimulating practice relieves this irritability for a time, by substituting its own peculiar action, and when administered in these (moderate) doses, which are never sufficient to intoxicate, the subsequent depression may be completely avoided. Of course, no practitioner who feels a proper regard for his patient, or for his own character, would allow the patient or his friends to increase the quantity of alcoholic stimulants, to such a degree as to run the slightest risk of producing these intoxicating effects. The quantity must vary according to the susceptibility of the patient; if this has been nearly destroyed by excesses, the quantity of alcohol which is necessary to produce a given effect, must of course be greater than in those cases. in which it is still but little impaired. The dose should always be as small as possible, for if the quantity necessary to tranquillize the patient be exceeded, it acts as an irritant, and produces injurious consequences."

There can be no doubt, that by the plan of treatment here indicated the majority of the cases of simple delirium tremens, especially in their early stages, may be very promptly and effectually cured. It is, in fact, the popular treatment of the disease—the "tapering off," as it is termed by the intemperate after a debauch—and the one, also, that was formerly pursued by many eminent practitioners of this city, either alone, or in conjunction with the exhibition of opiates as recommended by Snowden in his essay published in 1815. But, leaving out of the question the moral objections to the use of alcoholic stimulants in the treatment of delirium tremens, which we nevertheless consider far too important to be entirely overlooked, our experience, and since the year 1815, we have had ample opportunities for studying the disease, has taught us that there are numerous cases of the disease, in which, to say the least of it, the stimulant treatment is of very doubtful propriety, and many have fallen under our notice in which it has proved decidedly injurious. The evidence adduced by

Dr. Gerhard of the efficacy of this treatment, and its superiority over that by opiates is certainly of a very imposing character; it is nevertheless, in direct opposition to that furnished by the practice of the Frederick's hospital of Copenhagen; the stimulant practice being there found to give of all others the least favourable results;—of the patients subjected to it in 1817, 1 in every $2.\frac{3}{4}$; in 1818, 1 in every $2.\frac{1}{6}$; and in 1819, 1 in every $2.\frac{11}{12}$ died.

Notwithstanding Dr. Gerhard would appear to have entirely proscribed the opiate treatment in delirium tremens, it is nevertheless, the one that we have found the most generally successful—and the same statement is made by nearly all the more authoritative writers on the disease. We are perfectly aware that the practice has been abused—that in many instances inordinate doses of the remedy have been administered, and fatal results have in consequence ensued—that, also, in the cases attended with active congestion, or decided irritation or inflammation of the brain or of its membranes, it is all important to precede the use of the opium by local depletion, cold applications, purgatives, or stimulating enema, and revulsives. But, directed by a sound judgment founded upon correct views of general pathology and therapeutics, there are few cases in which opiates may not be employed with some good degree of certainty of their producing that sleep, from which the patient will awake perfectly restored.

It may be proper to remark, that Speranza, Frank, Rayer and Pinel reprobate in all cases of delirium tremens the use of opiates, and treat the disease as an inflammatory affection of the brain by the usual antiphlogistic remedies, while Albers, Lüders, Barkhausen, Von Roos and others confine the administration of opium, in moderate doses, to the asthenic and certain of the more chronic forms of the disease.

It has appeared to us, that by combining the opiate with camphor and ipecacuanha, we have seen more prompt sanative effects produced than when the opiate was given alone.

Dr. Gerhard's remarks on the impropriety of confining patients labouring under delirium tremens to bed, or subjecting them to any personal restraint, beyond what is necessary for their safety, corresponds with the experience of Dr. Barkhausen, who observes, also, that the patients are far more obedient to strangers than to their relatives and ordinary attendants, and are more readily controlled in an hospital than in their own dwellings.

We were somewhat surprised, we confess, to find an entire chapter devoted to the consideration of *cephalalgia*, its general symptoms, causes, morbid anatomy, and pathology, its varieties, diagnosis, prognosis and treatment; for however important this affection may be, from its frequent occurrence, its obstinacy in many instances, and the intense sufferings to which it gives rise, still it cannot be viewed in any other light than as a mere symptom dependent upon a great variety of diseases of the brain itself, or of some other organ. But however we may differ in opinion from Dr. Bennett, as to the propriety and expediency of a separate consideration of cephalalgia, we must admit that the account he has here given of it, is particularly interesting, and that his pathological remarks and practical directions are highly judicious.

In the chapters devoted to *epilepsy* and to *catalepsy* and allied affections, are presented a very full digest of all the important medical facts, opinions, and observations, in relation to the pathology and treatment of these obscure affections. The former, especially, has received all the attention which its importance merits;—and in the account given by Dr. Bennett of its symptomatology, etiology, varieties, anatomical characters, nature, and therapeutical management, the reader will find a very fair and comprehensive exposition of the present state of medical knowledge, in relation to each of these points, arranged with great perspicuity.

A short, but able chapter, is given by the same author on *spinal irritation;* the simplest form of the affection is the one here described; its more complicated forms being treated of under the head of hysteria, &c.

The following remarks of Dr. Bennett, are judicious, and require to be kept constantly in remembrance by the young practitioners:

> "The various and often contradictory symptoms induced by spinal irritation, render its diagnosis and treatment difficult and uncertain. Numerous facts, indeed, attest, that individuals have long laboured under rheumatic, neuralgic, and hysterical complaints, during which they have suffered the greatest tortures, although they have been relieved in a few days by treatment directed locally to the spine. Whatever difficulties, therefore, may exist in drawing a line of demarcation, between the effects of spinal irritation and numerous other disorders, notwithstanding the obscurity which rests on the precise nature of the morbid change which produces it, the great practical utility to be derived from its study is unquestioned. So fully are we impressed with its importance, that we consider that in all cases of neuralgia, rheumatism and hysteria, the spine should be examined; while, perhaps, there is scarcely a functional disorder to which the young female is liable, which may not occasionally be found connected with spinal irritation. We have often had an opportunity of observing the manner in which numerous disorders have been traced to this source, and feel assured that if practitioners in general would pay greater attention to this complication, many of the extraordinary and anomalous cases, which are at present the cause of great embarrassment in practice, might terminate in the speedy relief of the patient, and increased credit of the physician.
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> "It must not be supposed, however, that the difficulty terminates, even when the disease is found to be connected with spinal irritation, for experience has demonstrated, that this is itself not unfrequently a secondary effect, produced by the disordered functions of other organs. The first object of the medical attendant, therefore, should be to determine whether the affection is idiopathic or sympathetic, acute or chronic."

Spinal meningitis and *myelitis*, are the subjects of the ensuing two chapters. A very correct and lucid history of all that is known in relation to the various forms of these affections—the obscurity not unfrequently attendant upon which, demands on the part of the practitioner, a close attention to their diagnosic phenomena—is given by Dr. Bennett, under the several heads of symptoms, causes, anatomical characters, nature, diagnosis, prognosis and treatment. The observations of the principal writers who have treated of these affections, being carefully noted.

A short chapter, by the same gentleman, follows on the pathology and treatment of *hydrorachis*, as well that form which occurs previous to birth, as that which is developed subsequently. The account given of the disease is sufficiently full and accurate.

The latter remarks may be applied also to the chapter on spinal apoplexy; a disease of such unfrequent occurrence, so obscure in its diagnosis, and in relation to which we have so few accurate observations, as to render very defective our knowledge of its history, pathology and treatment.

The chapter on *chorea* and analogous affections, by Dr. Thompson, is among the most able and satisfactory in the volume before us, every fact tending to throw light upon the causes, nature, and management of the complaint, being carefully noted and lucidly arranged. The account given of the several analogous affections, and the suggestions as to their pathological causes are interesting, and though we may not always coincide with Dr. Thompson, as to the entire accuracy of all his views, they are nevertheless ingenious and based upon physiological opinions advocated by men of distinguished reputation. The analysis given by Dr. Thompson of the various remedial measures that have been recommended for the cure of chorea, and of the particular cases to which they are best adapted, is sufficiently full and accurate.

In the chapter on *Hysteria*, Dr. Thompson has very happily succeeded in reducing, to use his own words, "to a simple and connected arrangement, the 'disorderly heap of phenomena,' of which that disease has been defined to consist." His pathological views, are deserving of some consideration.

After some very pertinent remarks on the term hysteria, which, although established by long use, "seems to have been generally employed with more than ordinary vagueness." The idea attached to the name by various practitioners, being almost as varied as the phenomena themselves; and even when applied to designate "a certain and definite series of phenomena," the term is liable to the objection of suggesting a theory of the disease that is extremely objectionable, Dr. Thompson remarks, that—

> "The phenomena of the hysterical paroxysm are well known,—but those who are prone to such attacks are often subject to other affections, naturally referred to the same predisposition. A similar condition not unfrequently exists in some who rarely or never present the more prominent phenomena; and we therefore find it necessary to treat of the disease, not merely as an assemblage of certain characteristic symptoms, but also as a general condition disposing to the production of various analogous disorders, when suitable exciting causes are presented, we may, therefore, describe hysteria as a peculiar nervous susceptibility, leading to the production of symptoms remarkable for the capriciousness of their character, the changeableness of their seat, and the suddenness of their accession, and subsidence, the function of nutrition being seldom interferred with, notwithstanding their severity and long continuance. The mental condition of hysterical females is generally modified, and often distinguished by sensitive feelings, sudden impulses, and fickle temper. Sufficiently well marked cases of the disorder have occurred in men, under the influence of sexual restraint, or of depressing passions; but it more especially appertains to women, whose original susceptible nervous system has been rendered more than naturally mobile by an injudicious system of education; and it is from the age of puberty to the cessation of the catamenial function, that the greatest liability to the malady is observable."

Dr. Thompson describes hysteria under three forms; 1, the *regular*, in which, "the patient does not necessarily present any symptoms of habitual disorder, but is liable, under the influence of slight exciting causes, physical or mental, and sometimes without any appreciable cause, to sudden attacks of a spasmodic nature," the well known hysterical paroxysm. 2, the *irregular*, which "may exist without the occurrence of decided paroxysms. The phenomena which it presents, are indescribably various. There is scarcely any part, the function of which it may not disturb, so as to excite the suspicion of organic disease; but the rapidity with which the morbid condition is transferred from one part of the system to another, and the marked disproportion between the symptoms, are generally sufficient to indicate the real nature of the malady, although there is probably no class of cases, in which errors of diagnosis are so frequent." 3, the *complicated*, or when from an attack of other diseases in persons of hysterical constitution, the symptoms of the two complaints are so blended, that the more important malady may be modified or even marked. "Such a complication may increase the formidable aspect of the principal disease, without necessarily augmenting the danger, although it may eventually augment disorder, by promoting inflammatory action at the extremity of irritated nerves."

Dr. Thompson refers the production of the peculiar phenomena of hysteria, immediately to disease of the cerebro-spinal axis; the mutability of hysterical symptoms being readily explained by the close connection of the different parts of this axis, and the ready transference of congestion or irritation from one part to another.

When that extreme mobility or affectibility of the nervous system, constituting the hysterical habit or predisposition, exists, a very slight excitement will be sufficient to induce symptoms of hysteria. "Among these emotions of the mind of whatever kind, as of grief, joy, unrequited affection, jealousy, disappointment or surprise, are conspicuous. The force of imitation is also very remarkable."

> "The opinion that electrical agency may affect nervous subjects, is gaining ground and has the decided support of Rostan. The principal exciting cause, however, is irritation in some important organ; and since the association of hysteria with such conditions is the most important circumstance in reference to treatment, it will be found desirable to adopt a corresponding division of the malady as the basis of a more simple and available arrangement of practical remarks."

In describing the treatment of hysteria, Dr. Thompson throws aside the arrangement adopted by him in his description of its phenomena, and divides the disorder into the idiopathic and sympathetic.

The idiopatic form, is that in which there is no evidence of the disorder of any organ, except the cerebro-spinal axis. It is subdivided into the congestive, either with general plethora or local determination of blood, and the atonic.

Secondary or sympathetic hysteria, is generally associated with derangement of the intestines or the uterus, to which parts it will therefore be necessary to direct the chief attention, in the treatment of this form of the disease. Hysteria may be associated with intestinal irritation or with intestinal torpor, with menorrhagia, defective menstruation and leucorrhœa, in each of which cases a very important modification of treatment is demanded,

Notwithstanding there is some degree of awkwardness and confusion in the double division of the forms of hysteria adopted by Dr. Thompson, which might very easily have been avoided; his account of the pathology of the disease, bears, in general, indications of truth;—it certainly accords very well with our knowledge of the physiology of the nervous system, and offers a rational explanation of the various and diversified morbid phenomena characteristic of these affections to which the term hysterical has been usually applied. The practical directions of Dr. Thompson for the management of the several forms of hysteria are highly judicious.

A very admirable and full digest is given by Dr. Bennett, of the leading facts in relation to the pathology and treatment of *tetanus*. Dr. Gerhard, in a note to the section which treats of the anatomical characters of the disease, states that he has "examined with great attention the brain and spinal marrow of ten or twelve subjects, dead of tetanus, and could not detect any lesion *which seemed to have the slightest influence* upon the production of the symptoms." We should have expected from so accurate a pathological observer, something more than this loose general statement. Before the observations, the result of which is here recorded, can be made use of in illustration of the nature of tetanus, it is necessary that we be informed whether any, and if any, what lesions were detected either in the brain or spinal marrow, or in any other organ; and also whether the tetanic affection, of which the patient died, was what is termed idiopathic or traumatic. We make this remark from the fact, that a vast number of pathological facts upon record are rendered valueless from being stated in the same loose manner.

The chapter on *hydrophobia* is also by Dr. Bennett. It contains a very clear account of the facts and opinions recorded by the prominent writers on the disease in relation to the nature of the malady, and the effects of the various and opposite plans of treatment which have been proposed for its cure. We must confess, however, that there is not any evidence afforded in the chapter, which proves positively to our minds, the production of a specific disease in the human body from the bite of a rabid animal. If we should admit that such an affection is really produced in this manner, we have then a curious fact in pathology, which stands opposed to all our previous observations, namely, that of a specific malady resulting from a morbid poison, the phenomena of which are altogether dissimilar from those of the disease by which the poison was generated.

The reader will find a very complete and interesting abstract of the present state of our knowledge in relation to the characteristics, varieties, causes, nature and treatment of *neuralgia*, in the chapter by Dr. Thompson on that affection.

The account of *paralysis*, which follows, is by Dr. Bennett. His description of the various forms and varieties of the affection; their causes, anatomical characters, nature and remedies, is sufficiently full and accurate; comprising an able and luminous digest of all that is at present known in relation to these particulars.

A short chapter by the same gentleman on *barbiers*, a disease but little prevalent excepting in tropical climates, and distinguished by tremors, spasms, rigidity and contraction of both inferior extremities, with more or less paralysis, closes the consideration of the proper nervous affections.

To these follow a very concise account of the several *inflammations of the eye*, and of *amaurosis*, by Dr. Taylor, and the volume concludes with an admirable sketch by Dr. Bennett of the inflammations of the ear.

We have thus run rapidly over the present volume of Dr. Tweedie's Library of Medicine, and expressed briefly but candidly our opinion of its contents. The estimate we have formed of the value of each of the chapters, separately considered, will be found to accord strictly with the high character we gave, in the commencement of this notice, of the work as a whole.

We may remark in conclusion, that, in general, the notes of the American editor are important and judicious, and enhance not a little the value of the present edition. D. F. G.

BIBLIOGRAPHICAL NOTICES.

ART. XIV.—*Remarks on Fractures.* By A. L. PEIRSON, M. D. 8vo., pp. 108. Boston: 1840.

THE dissertation of Dr. Peirson formed the address for 1840, which is annually delivered before the Medical Society of the State of Massachusetts; and the author was induced to make choice of the subject of fracture, not because he had any new views to offer, or novelties in practice to recommend, but from its being a subject of deep and universal interest to the profession.

The kinds of displacement after fracture, the causes, symptoms, prognosis, and mode of union, are all concisely considered; and the general indications in the treatment of these injuries, are well set forth. The subject of non-union is also cursorily glanced at; but the chief part of the address is occupied in treating of the peculiarities presented by fractures of the different bones in their diagnosis and treatment. Appended in the form of notes, are the details of six cases treated by the author with the immovable apparatus, and an interesting series of tables relating to fractures, collected from the records of the Massachusetts General Hospital, from 1821 to 1840. The whole number of fractures which occurred in this institution during the period mentioned, was 367; but out of this number of cases, owing to defects in the record, but a small proportion only could be used for analysis. The small number of cases included, detracts considerably from the value of the results obtained by their analysis; but nevertheless, as they may materially aid in future investigations on the subject of fracture, we shall lay them before our readers. With the exception of the tables compiled from the records of the Pennsylvania Hospital, by Dr. Wallace,* we know of none which have been so carefully drawn out as those contained in the work before us, and cannot but regret that so little statistical information of a similar kind is furnished by those connected with the public institutions in this country.

In regard to the influence of age on the time of union of bone, in cases of simple fracture, the following are the results of analysis:

Clavicle.—In seven cases under thirty years of age, the average time of union was 20.85 days. In six cases over thirty years of age, the average time of union was 21.50 days. Average union of the whole thirteen cases, 21.15 days. Average time of discharge of twelve cases, 28.25 days.

Humerus.—In six cases under thirty years of age, the average time of union was 25.16 days. In four cases over thirty years of age, the average time was 28.50 days. Average of the whole ten cases, 26.50 days. Average time of discharge, 36.62 days.

Femur.—In eighteen cases, thirty years of age and under, the average time of union was 35.88 days. In seventeen cases, upwards of thirty years of age, the average time of union was 43 days. Average of the whole thirty-five cases, 37.62. Average time of discharge of twenty seven cases, 51.29 days.

Tibia and Fibula.—In eighteen cases of thirty-one years and under, the average time of union was 32.33 days. In seventeen cases, upwards of thirty-one years of age, the average time was 38.64 days. General average of thirty-five cases, 35.06 days. Average time of discharge of twenty-eight cases, 47.53 days.

Tibia alone.—In six cases under forty years of age, the average time of union was 23.50 days. In six cases of forty years and upwards, the average time was

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* Medical Examiner for 1838, and this Journal for Nov. 1839, p. 259.

31.33 days. General average of twelve cases was 27.41 days. Average time of discharge for seven cases, 35 days.

Fibula alone.—In eight cases of thirty-two years and under, the average time of union was 22 days. In eight cases, upwards of thirty-two years, the average time was 30.87 days. The general average of sixteen cases was 26.43 days. Average time of discharge of ten cases, 30 days.

Patella.—In three cases under thirty years of age, the average time of union was 58.33 days. In three cases of thirty years and upwards, the average time was 23.33 days. General average, 40.83 days. Average time of discharge of four cases, 41 days.

"Thus it appears, that in all cases except those of fractured patella, there is a remarkable uniformity as to result in the influence which the age of the patient exerts in fixing the period when union takes place; the average time of union being shortest in the younger class of subjects."

In looking over the tables we have been much struck with the great mortality following the amputations made in the cases of fracture. In the whole number of cases, (367,) eighteen patients are stated to have undergone amputation, of which five are marked cured, ten as having died, and the results of three are not mentioned.

The following notices of cases we extract from the address without comment. They are rare and curious, one of them perhaps *unique;* and it is to be regretted that they have been mentioned with so little detail.

"A seaman was brought under my care, who forty-five days before, while at sea, had fallen from the main-top-sail-yard upon the deck of the vessel, fracturing the humerus obliquely. The superior fragment penetrated the skin, and after ploughing a furrow in the plank half an inch deep and two inches long, was finally broken off in it. On my first visit, this fragment, which was about three inches long, was presented to me, which the captain assured me he had much difficulty in extracting, two days after the accident, from the plank in which it had buried itself. The final consequences of the accident were, after the patient's recovery, anchylosis of the elbow, shortening of the humerus, partial anchylosis of the shoulder joint, and displacement of the fragment of the fractured scapula." p. 7.

"A wagoner was crushed, by the passing of the wheel of his loaded wagon over the lower jaw. A double fracture was occasioned, and the detached portion of bone, with the tongue, was forced down the throat, so as nearly to occasion suffocation. The accident occurred in the night, but, fortunately, near a house whose inhabitants were awake; and the patient obtained the loan of an iron spoon, with which he contrived to drag the tongue forward, and prevent the impending suffocation, till I was enabled to secure the fragments by wiring the teeth. Great swelling followed, preventing deglutition for many days; but the patient, being supported through an œsophagus tube, eventually recovered. p. 41.

"A man twenty-one years old fell from a tree, at the height of fifteen feet, and struck his head upon the pavement beneath. His head was bent down upon his chest, and the weight of his body brought a strain upon the cervical vertebræ. A severe laceration of the scalp was his most obvious injury; but he constantly asserted that 'his neck was broke.' I could discover no perceptible crepitus, by the slight movement I dared to make; and there was, at first, no paralysis. After death, which occurred twenty-two hours after the accident, three of the cervical vertebræ were found fractured, and their intervertebral substance crushed and comminuted. The remarkable symptoms in the case were, the absence of paralysis, till within two hours of death, the undisturbed state of the intellectual functions, and the patient's own consciousness of the real nature of the injury under which he was suffering." p. 42.

In terminating our notice of the Remarks of Dr. Peirson, we must express the pleasure that we have derived from a careful examination of them. They come evidently from a practical man and acute observer. The observation made at the commencement of the address, that the honest views and faithful experience of any member of the profession, on even the most common practical topics, are worthy of attention, is eminently just; and we cannot but wish that gentlemen called upon to perform duties similar to that of which Dr. P. has so well acquitted himself, would give us plain and honest views of their experience, in the diseases or accidents of every day occurrence, in place of the vain attempts at oratory on thread-bare subjects, which we so frequently meet with. G. W. N.

Art. XV. *Remarks on the Surgical Practice of Paris.* Illustrated by cases. By W. O. Markham, M.D., 8vo. pp. 114. London: 1840.

The work before us constitutes the thesis of the author, to which a gold medal was assigned by the Senatus Academicus of the Edinburg University, at the graduation of 1840. That our readers may be able to judge of its character, we proceed to furnish some extracts from it, premising, however, that by his own confession, Dr. Markham passed but a few months among the Parisians—a time hardly long enough for one well versed in the subject, and of mature mind, much less for "a young and not very experienced observer," to give an account of the general practice adopted at their hospitals, and pronounce judgment on their surgeons.

Much has been said of M. Louvrier's apparatus for the cure of anchylosis. The subject is thus noticed by Dr. Markham.

"*Anchylosis.* M. Louvrier's operation. A woman, 45 years of age, under M. Blandin's charge at the Hôtel Dieu, had been affected with anchylosis of the knee for ten years, an anchylosis consequent on white swelling. The leg was very much flexed upon the thigh, forming an acute angle with it; motion was almost entirely destroyed; but on rubbing the parts together forcibly, a slight crackling was heard and felt. The back of the condyles, and *not* the lower surface of the femur, rested on the tibia, and the patella was forced on the under surface of the femur, and appeared fixed and united there. All the parts which surrounded, and entered into the composition of the joint, were retracted. Such was the condition of this woman's knee when she presented herself for relief. Her health was good, and she was willing to undergo any suffering even amputation of the limb, rather than submit to the endurance of this impediment, which rendered her life (always hitherto an active and industrious one) burdensome.

"It was evident, that all the simple and ordinary methods employed for the resolution of anchyloses, were futile in respect to this case, both by reason of the long period of the existence of the malady, and its extent. So grave an operation as amputation, M. Blandin thought was inadmissable, though I believe in like cases it has occasionally been performed at the request of the patient.

"After some discussion it was at last determined, at the particular request of the patient, and after many pressing instances from M. Louvrier, that this gentleman should be permitted to practise his operation (which was much the subject of discussion in Paris at the time) on the knee, though still much against M. Blandin's opinion.

"The object of M. Louvrier's operation is, by the aid of powerful machinery, to extend the anchylosed joint, disregarding utterly all impediments, and the nature of these impediments. The apparatus employed, it is impossible to describe, as it is of infinite complexity, and requires much time, labour, and dexterity to arrange; but the principle of its action is plain: The thigh is made a fixed point, and extension is applied to the leg by aid of the two mechanical powers, the screw and the lever, sufficient to reduce the limb from its highly flexed, to a perfectly extended position. What is going on in or about the joint, during the operation, it is impossible to observe, as the whole limb is thickly enveloped in coverings of brass, leather, &c., &c. When the apparatus is adjusted, all that is visible is the limb thus covered, placed in a wooden case, and resting in a kind of groove, where it slides as it is extended. The operator places himself at the foot of the apparatus, and turns a small wheel, which acts on the leg through the medium of a very strong catgut cord attached to different parts of the leg; the limb gradually redresses itself, and in about two minutes it is perfectly extended. The pain suffered by the patient seemed excessive, and was prolonged by reason of the apparatus breaking in some part during the first attempt. What the force applied was I do not know, but it must have been very great. On examining the limb, when the apparatus was removed, the patella was found free, and the tibia almost entirely thrown *behind* the femur. Conjecture alone could give information as to what had taken place inside the joint. The skin was not torn near the joint, but it was at the heel. Every precaution, after the operation, was taken to anticipate the violent inflammation which might be expected to arise, by the application of leeches, &c., and by placing the limb in a perfectly immoveable position. By these, and other antiphlogistic means, the violent constitutional symptoms that arose were subdued, and she (the patient) seemed to rally from the low state into which she had fallen. But it was only an appearance of return to health, and she gradually sunk into a desponding state. The pain in the knee was constant, her nights were often sleepless, her appetite not good, pulse quick, and extreme pallor of the face. She thus continued till she left the hospital, about five months afterwards. The limb then was perfectly useless, and always painful, and could not sustain the slightest pressure of the body; and this woman evidently seemed sinking from some cause, when she demanded her dismissal. It was difficult to give the precise state of the knee, as it was, and had been all along from the time of the operation, enveloped in the starched bandage.

"Two other operations of this nature were performed shortly afterwards, on patients of M. Velpeau at La Charité; one died fifteen days after the operation, it was said, of peritonitis; the other, after a rather longer period. At Hôpital Neckar, another case terminated fatally, through gangrene, I believe, of the limb; and M. Roux mentioned a case where he was called in to perform amputation of the thigh, which had been fractured in a young man during M. Louvrier's operation.

"Several other cases were mentioned in the journals as occurring in hospitals and private practice, and with different success as to their results.

"It is a matter of no little surprise to find, that it is possible for men of the highest anatomical knowledge and surgical skill, so to lose sight of the first principles of surgery, and admit into their practice (even against their own conviction) an operation of the above nature, where all the elements of scientific reasonings are broken down, and made to yield before the force of brute mechanical power—ligaments ruptured, tendons or muscles rent from their adhesions, muscles torn, arteries or nerves torn asunder, go for nothing in M. Louvrier's reasoning. He does not deny that all, or any of these accidents may happen; but he affirms that, from some extraordinary circumstance, no evil results arise from their occurrence, basing this assertion on a long list of published successful cases, which, if true, would, indeed, bring a new era into the art of surgery; but as these cases were published under M. Louvrier's care, and most of them only a short time after the operations were performed; and as one or two well authenticated and isolated cases of success prove nothing, we can place little reliance on this assertion, which is most decidedly opposed to the facts which occurred in the public hospitals, and which do not seem to prove, at least in this instance, that *à priori* scientific reasonings are to yield even to the speciousness of a novel discovery, (as it was called,) embellished by the colours of vaunted continual success.

"In the case of the Hôtel Dieu, M. Blandin argued against the operation, before it was performed, but yet he allowed its accomplishment. This instance, however, made him declare that in a like case he would never admit a like operation; that it is dangerous in the extreme, and contrary to all reasonings. M.

Lisfranc, in his usual warm way, sternly opposed himself to it, and always regarded it as a species of pure empiricism.

"After writing the above, I was informed of two other recent cases, one at Hôpital Beaujon, where great laceration of the skin, and death was the consequence; and of another in town, where rupture of the popliteal artery, and sphacelus of the limbs ensued."

Our next extract concerns a Parisian operator who has long had an unenviable notoriety by his love for cutting.

"In speaking of cancerous tumours, I might mention that the most formidable do not seem to deter the surgeon in chief of the Hôtel Dieu, (M. Roux,) from attempting their removal. I have seen him remove an encephaloid tumour of the testicle, in its last stage of degeneration, extending towards the abdomen along the course of the cord—a tumour larger than two fists—it was an operation of great difficulty, and of great pain and suffering to the patient, but was performed in a masterly manner, the enormous wound left was covered with charpie, and ulceration and suppuration proceeded their course for a month favourably, when there appeared a small tumour rising up in the centre of the wound, as if proceeding from the abdomen; it increased rapidly, and when it had gained the size of an egg, M. Roux again ordered the patient into the operating theatre, and again removed a tumour; a third was not long in showing itself, and M. Roux at last deeming all attempts to remove an immoveable disease useless, sent the the man into the country to die. This case, as occurring in the hands of the first official surgeon in Paris, must excite no little surprise; but in a scientific point of view, it surely needs no comment.

"Of the same aspect was another case of fungoid disease, occurring in the femur, where the patient's powers of suffering seemed to me most uselessly put to the test, and his end hastened by an operation. This man presented that well-known aspect which is an infallible indicator of the progress of cancer; the thigh was enormously swelled, and covered with blue veins; a small part of the highest part of the thigh appeared unaffected by the disease, and here M. Roux amputated the limb: the operation was most difficult and prolonged; a very great quantity of venous blood was lost; the man fainted again and again after the operation, and then rallied, but he never recovered from the shock, his face was sunken and pallid and mournful, his pulse quivering, and agitation extreme, and he died on the third day after the operation. The fungoid disease proceeded from the centre of the bone, of which it had completely altered the texture; the muscles also, all around the thigh, could not be distinguished from the diseased mass."

M. Ricord and his practice are thus spoken of:

"*Phymosis.* M. Ricord always performs the operation of circumcision in this complaint, when it is possible, but when the phymosis is complete, when the prepuce is small, and tightly applied to the gland, then another operation must be performed. In performing this, M. R. is not content with the common incision, carried along from the opening of the prepuce to the base of the glans, (on the upper part of the penis;) but after making this, he practises another in a parallel direction, on the lower part, at the frœnum; then seizes the flap left on either side with a pair of forceps, and cuts them off with the scissors. This operation is long, comparatively, and painful; but M. R. declares that the result, which is really excellent, well repays the extra pain, for scarcely any deformity ensues; and this is of the highest possible importance, added M. R., for there is no part of the body where surgery ought to be more coquettish.

"In performing this operation (and the same rule applies to all other operations on the penis) the points of the incision should be marked out by nitrate of silver, at the spot where the knife's point should make its appearance at the base of the glans. In circumcision, also, the line of incision should be marked; a narrow, fine, sharp knife should be used. After making these observations, M. R. proceeded to operate on a case of the nature mentioned above, where the prepuce was firmly applied to the glands, and was very short. M. R. unwittingly made use of a very large, dull knife, and did not mark out the point where the incision ought to terminate. The consequence was, that the knife, when pushed forwards, instead of piercing the skin at the base of the glans, puckered up the skin before it, so that when the knife was forced through, and the incision completed, the skin of the dorsum of the penis was ripped up very nearly to the pubes.

"M. R. said that he had seen Dupuytren and his own predecessor at the Hôpital du Midi, cut off the glans penis as well as the prepuce, in operating for phymosis, by circumcision."

The following remarks are made under the head of amputation:

"As regards the healing of the stump, it is almost impossible to make a comparison between the results of the flap operation, now so generally practised in England, and the results of the circular, as performed at Paris,—for several of the leading surgeons still hold it, both by precept and example, as highly unscientific, to attempt union by the first intention, and their reason is, because this first intention so very often fails;—but why does it fail? No man in *England* can guess; but I think, that if any unbiassed individual will pay a visit to any of the large Parisian hospitals,—follow the changes in the wound of an individual, who has just entered for an injury, being previously in perfect health,—if he will notice the characters which almost every wound takes on—the ever-existing erysipelas, and its distressing consequences, he will at once allow that there exists some other cause than the idiosyncrasy of French limbs, or the particular nature of the healing process itself, to account for its failure. Moreover, are all the rules of the operation properly attended to? I doubt this. The heat in the hospitals is most oppressive;* ventilation, or opening of a window, is not permitted; each bed is covered, above, and on all sides, by curtains; and, what seems almost incredible—certainly incomprehensible—when an individual has undergone an operation, the curtains of his bed are *doubled* on every side, and he is covered up with as much care from all currents of air, as if he were an exotic in the hotbed of a gardener. In one winter Dupuytren lost twenty-one out of twenty-six amputations below the knee. And let any one who wishes to be convinced, visit that hospital at any time, and see erysipelas always present—often raging—in the surgical ward; and he will have much less difficulty than he had before, in understanding why the wounds from operations almost always fail to heal by the first intention. No doubt, the Hôtel Dieu presents the worst picture of Parisian hospitals; but the same circumstances prevail, to a greater or less extent, in every hospital. Moreover, as to the dressings to produce union, are they such as are appropriate? M. Blandin (who is the only gentleman who attempts the first union) says, no; and in fact, accounts for the failure of his *confrères*, through their faultiness on this point. M. Lisfranc never attempts union by the first intention;† and he adds, occasionally, another peculiarity to his operation, viz: slitting down the lower flap, according to the invariable proceeding of Baron Larrey; and this, with the intention of being enabled, when he pleases, and when granulation has commenced at the bottom of the wound, to bring the parts into more perfect contact. The only possible advantage which this addition seemed to me to give, was its allowing free issue to any puriform matter, and preventing any collection taking place. Its obvious inconvenience, in uselessly enlarging the wound, struck me as quite condemnatory of its practice. M. L. always dresses the stump the day following the operation. M. Roux heals stumps by the established method; though now and then he attempts the first intention; but his rule of practice I could not discover. The only good stump I saw in his ward, was one healed by the first intention in fifteen days after the operation. The appearance of a large, red, flat surface, covered with granulations, and often with a bone projecting from the

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"* I have several times seen medical students (who cannot certainly be considered as an hysterical class of beings generally) faint in the Hôtel Dieu during the visit, and have myself frequently experienced excessive weakness and giddiness in the same hospital."

"† M. Velpeau has made the attempt, but it has failed in his hands."

centre, was a curious view to an English eye, and it was one with which I was made quite familiar in M. R.'s wards. The results of his practice, I should say, were unlucky, for I have seen exfoliations of bone take place—abscesses form in all directions—in fact, I believe, never an amputation (where union by granulation was attempted) without some accident. The reason of the frequency of these secondary accidents may, I believe, be in great part sought in the unhealthiness of the Hôtel Dieu, for they happened also to M. Blandin; but in part also, from the nature and conditions of the cases on which M. Roux operates.* Thus, I have seen M. R. amputate an arm below the shoulder, in an individual in the very last stage of hectic and feebleness, and whose whole arm was a mass of suppuration; two days after the amputation, an abscess was opened beneath the *pectoral* muscle, and an enormous quantity of discharge evacuated: the abscess reached in every direction, and the man died on the third day."

The extracts above given are fair specimens of the work. The fondness of the chief surgeon of the Hôtel Dieu for operating in hopeless cases, is matter of notoriety to all visitors to Paris who have followed his clinique, as well as to the French themselves, and should be condemned. The carelessness of M. Ricord, provided the writer be correct, he is justified in exposing, and the results of the murderous treatment lately employed there in cases of anchylosis, the matter of which, we may add, we find confirmed in some of the late periodicals, it is the duty of a writer to make known, and for a passing notice of these and like subjects, we have no fault to find, though we cannot but disapprove of the general spirit of the work, which we think calculated to do injury to the well-earned reputation of Parisian surgeons, and to leave a bad and unjust impression upon the mind of the reader, in regard to French practice generally. Dark points are set out in relief, and dwelt upon; their excellencies are forgotten. Surely in a city like Paris, unequalled, as she is, in her institutions for the relief of misery, and abounding in surgeons able, learned, and devoted beyond parallel to their pursuits, something good and worthy of imitation—something that at least could be well spoken of, might be found by one going there to seek knowledge, and in a work like the present, which professes to notice the surgical practice of its hospitals, more is expected than the mere showing off of the weak points of particular individuals. G. W. N.

ART. XVI.—*The Elements of Materia Medica, comprehending the Natural History, Preparation, Properties, Effects, and Uses of Medicines. Part II containing the Vegetable and Animal Materia Medica.* By JONATHAN PEREIRA, F. R. S., and L. S., member of the Royal College of Surgeons, &c. London: 1840. 8vo. pp. 891.

IT gives us much pleasure to be able to announce the appearance of the second part of Mr. Pereira's great work on Materia Medica. This includes the remedies derived from the animal and vegetable kingdoms, and while it has all the merits which we on a former occasion ascribed to the first part of the work, is much more extensive, and more replete with diversified, interesting, and novel information.

Mr. Pereira's treatise evinces much original observation. He has not contented himself, as writers on materia medica are apt to do, with merely copying his predecessors, but he has examined carefully for himself, and has drawn his knowledge from the fountain head. We do not mean to say that all, or even a hundredth part of what he has written is entirely original, so far as relates to

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"* In giving such free opinions, here as elsewhere, I do trust, that it will be remembered, that they are *but the opinions* of a young, and consequently, not very experienced observer. To have illustrated every opinion by numerous cases, would have been impossible, from the necessary limit of these notes."

the facts or opinions stated. A work on materia medica thus constituted would be good for little or nothing. The science is made up of the experience and observation of ages, and the proportion of new facts to the whole mass is very small. But errors have on various occasions crept into treatises upon this subject, and statements which were true when they were first made, have, by gradual changes in the course of trade, and from various other causes, become false in relation to the present times. Now these errors and misstatements have been perpetuated by the too common habit among authors of restating what they find stated by others, without examining for themselves. Mr. Pereira has not been guilty of this fault. He has, it is true, consulted a vast number of authors, of various countries and languages, British, French, German, and American, and has with great industry culled whatever was important from their writings. But he has not contented himself with the mere process of culling. Wherever he has had the opportunity, and we presume no place in the world affords better opportunities than London, he appears to have made personal examination into the history and character of drugs, and while he has thus been enabled to give his sanction to statements that might otherwise have been doubtful, he has succeeded in collecting many new facts, and in correcting many mistakes. There is, therefore, a freshness and raciness about his work, as if it had sprung directly from the soil of observation. It is neither stale from the mere repetition of long kept truths, nor musty with antiquated errors. Even the long recorded facts of the science have in his treatise an air of originality, as he has obviously not passed them through his hands without a particular scrutiny. He has in some measure made them his own by assuring himself of their genuineness.

Another merit of Mr. Pereira's work is the frequent reference to authority. The author is rich enough himself to afford to pay what is due to others. The great mass of materials which compose the basis of the science are so generally known as to have become common property. Of these, of course, he makes use without specific acknowledgment. But whatever is new or peculiar, he refers expressly to its source, when discoverable, and not unfrequently traces a fact, through the medium by which it has reached him, up to its original fountain. His conduct in this respect contrasts very happily with that of many writers, whose chief merit consists in so skilful an arrangement of borrowed materials, as to gain the credit of their authorship from those who know no better, while to the well-informed, they give no available opening for a charge of plagiarism.

Where so much has been done, and so much done well, it would be vain to attempt a specification of the merits of particular parts. Specimens of the work have already found their way into the journals, from which the medical public may infer the general style of its execution. An idea may be formed of the immense amount of matter collected, from the fact that the treatise extends, including both its parts, to 1440 large and closely printed octavo pages, and that the language is exceedingly concise, perhaps, in some places, even to a fault, so that substance is never excluded by mere verbiage. The style is throughout, clear and precise, without attempt at ornament, but correct, plain, and simple, such as that of a purely scientific work ought to be. For the physician who is desirous to become master of what is known upon the subject of materia medica, we cannot too strongly advise the perusal of Mr. Pereira's treatise. G. B. W.

Art. XVII.—*First Annual Report of the Registrar General on Births, Deaths, and Marriages in England.* London: 1839. 8vo. pp. 168.

Mr. Lister, the Registrar General, in presenting this report to Lord John Russel, one of the Secretaries of State, observes, that the abstract contained in it, is for the year ending June 20, 1838. The first part of the document is taken up with the details attendant on the organization, and it is evident that the labours of Mr. Lister and his assistants for this purpose have been great. At the termination of the fifth quarter, ending September 30, 1838, there were no less than 2193 registers of births and deaths appointed, and three months later, 817 registers of marriages. To each of these, were furnished the proper books, besides marriage register books to 11; 694 Clergymen of the Church of England, to 90 registering officers of Quakers, and to 36 secretaries of Jewish Synagogues.

There are thus more than 14,000 persons charged with the duty of making returns, and from these were received for the year above stated, more than 80,000 separate papers containing 847,149 entries.

Without noticing this part of the subject farther in detail, we proceed to give the results obtained by Mr. Lister. And first of

MARRIAGES.

	According to the Rites of the Established Church.	Not according to the Rites of E. C.	Total.
Quarter ending Sept. 30, 1837,	23,541	489	24,030
Quarter ending Dec. 31, 1837,	33,291	1,158	34,449
Quarter ending March 31, 1838,	22,016	1,185	23,201
Quarter ending June 30, 1838,	28,353	1,448	29,801
The whole year,	107,201	4,280	111,481

Of the marriages included in the second column, 76 were between Quakers, and 135 between Jews.

The following is also added—

Number of persons named not of full age,	Males	5,575
	Females	16,563

Births.—To this part of the system, there appears to have been at first, an obstinate opposition; the consequence was a deficiency in the early registrations:

	Males.	Females.	Total.
Quarter ending Sept. 30, 1837,	38,368	36,220	74,588
Quarter ending Dec. 31, 1837,	45,948	43,580	89,528
Quarter ending March 31, 1838,	58,161	55,654	113,815
Quarter ending June 30, 1838,	62,386	59,395	121,781
The Whole Year,	204,863	194,849	399,712

Deaths.—In order to render these returns more available to the general welfare, Mr. Lister issued a circular to all the authorized practitioners of medicine and surgery in England and Wales, whose names and address he could obtain, requesting them to place in the hands of some person, in the house where the death occurred, a written statement of the *cause of death*. This proposition was strenuously supported by the respective Colleges of Physicians and of Surgeons and the Society of Apothecaries, and the result has proved highly satisfactory. The arrangement of these returns was committed to Mr. William Farr, and his tables constitute a most valuable part of the present report.

Mr. Lister from former well ascertained data, estimates the population of England and Wales, during the period included in this report, at 15,324,720.

The deaths returned for the year, were

Males,	170,965
Females,	164,991
	335,956

Being rather more than one death in 45 of the population.

The abstract of deaths is arranged in twenty-five tables, comprehending the whole of England and Wales, and these again are calculated in the proportion of the respective deaths at various ages in 1000. From the summary we select the following:

	Males.	Females.	Total.
Deaths under 1 year	39,990	31,898	71,888
of 1 year and upwards	14,198	13,710	27,908
of 2 years	7,474	75,09	14,983
100 and upwards	39	66	105

The following table shows the proportion of deaths at different ages, out of every 10,000 deaths of males, of females and of both sexes:

	Males.	Females.	Both Sexes.
Under 1 year	2,339	1,993	2,140
1 to 4 "	1,742	1,780	1,760
5 to 9 "	457	462	460
10 to 19 "	554	647	599
20 to 29 "	738	833	785
30 to 39 "	655	715	683
40 to 49 "	653	632	643
50 to 59 "	656	621	638
60 to 69 "	813	823	818
70 to 79 "	830	883	856
80 to 89 "	473	556	514
90 and upwards	94	115	104
	10,000	10,000	10,000

It is not possible, within our brief limits, to do full justice to the herculean labours of Mr. Farr. He has not only given a general table of the mortality, but he has carried out the abstract of the causes of death in each of the twenty-five divisions already alluded to, so that the healthiness, or at least the prevalent diseases in every district may be seen at a glance and compared with each other. We must content ourselves with some general results.

In his communication to the Registrar General, Mr. Farr submits the abstracts of the "Recorded causes of 141,607 deaths, which were registered in England and Wales, during the HALF YEAR ending December 31, 1837." The total number registered for that period, was 148,701, thus leaving 7,094 unaccounted for. After explaining the principles on which he has arranged his statistical nosology, he presents a table, from which we extract the general divisions:

	Males.	Females.	Total.
Epidemic, endemic and contagious diseases,	16,190	16,347	32,537
Diseases of the Nervous system,	11,729	10,123	21,852
" of the Respiratory organs,	18,925	19,596	38,522
" of the organs of circulation,	902	694	1,596
" of the digestive organs,	5,115	4,635	9,850
" of the urinary organs,	683	133	816
" of the organs of generation,	13	1,485	1,498
" of the organs of locomotion,	505	424	929
" of the integumentary system,	158	106	264
" of uncertain seat,	7,942	8,265	16,207
Old age,	5,674	7,017	12,691
Violent deaths,	3,005	1,240	4,845
Causes not specified,	3,718	3,376	7,094
	75,159	73,542	148,701

Some of the diseases may be more particularly specified. Thus the mortality of

	Males.	Females.	Total.
Cholera is	246	214	460
Influenza,	220	264	484
Small Pox,	3,050	2,761	5,811
Measles,	2,340	2,392	4,731
Scarlatina,	1,238	1,282	2,520
Hooping Cough,	1,277	1,767	3,044
Diarrhœa,	1,451	1,304	2,755
Dysentery,	350	325	675
Typhus,	4,439	4,608	9,047
Convulsions,	5,798	4,931	10,729
Consumption,	9,494	10,753	20,247
Decline,	3,474	4,033	7,507
Dropsy,	2,445	3,139	5,584

One of the most interesting comparisons instituted by Mr. Farr, is that between city and county districts:

The population of the cities compared, was	3,553,161
The total deaths, derived from the thirteen classes above enumerated, were	47,953
The population of the counties, was	3,503,750
Total deaths as above,	29,693

Again, in the above population of seven millions, one-half of which live in towns, and the other half in rural districts, the deaths by consumption, childbirth and typhus, were as follows:

	Counties.	Cities.	Increase per cent in Cities.
By consumption,	5,857	8,125	39
By childbirth,	217	372	71
By typhus,	1,564	3,456	221

"1265 females died in childbed, and the greater proportion of puerperal fever." This, let it be recollected, is for six months only. It is greatly to be regretted, (says Mr. Farr,) that in the present state of medical science, 2,500 women die in childbirth every year in England and Wales. And when this is compared with the number of births and miscarriages, he estimates, that nearly 4 in 1000 are fatal to mothers.

It is evident, that if these investigations are continued in the spirit with which they have been commenced, they will furnish most important contributions to the science of Vital Statistics.

In conclusion, we have only to regret, that the number of suicides and stillborn are not distinctly stated. The former are included under the division of violent deaths, and the latter do not appear to have been enumerated; at least we can find no mention of them. T. R. B.

Art. XVIII.—*Erster Medicinischer Jahres-Bericht vom Marien-Krankenhaus für Arme in St. Petersburg vom Jahr*, 1836. Von dem Oberarzt dieser Anstalt Dr. H. U. L. V. Roos, Staatsrath, Ritter, u. s. w. St. Petersburg, 1837. 8vo., pp. 112.

The First Annual Medical Report of the Marien Hospital for the Poor in St. Petersburg, for the year 1836. By Dr. H. U. L. Von Roos, Chief Physician to the Institution, &c.

The Marien Hospital was established in 1803, by the Empress mother, Maria Feodorowna, for the reception of patients of the poor and necessitous classes of St. Petersburg, as well as for supplying medical advice and remedies to those among them labouring under diseases that permitted their presenting themselves at the hospital, either daily or at longer intervals, according to the nature of their respective cases. The patients received into the wards of the hospital are denominated *stationary*, those who receive advice and medicine as out door patients, *ambulatory* patients.

When the hospital was first opened, provision was made for only two hundred beds, since then 131 beds have been added to the original number, and we are informed that by an imperial ukase the number of beds will shortly be increased to four hundred.

The whole number admitted as stationary patients from the establishment of the hospital in 1803 to the first of January, 1837, was 81,595; of these there were healed 55,978, and there died 13,145, or 4.49 per centum.

The document before us is the first official medical report that has been given to the public of the nature of the diseases treated in the wards of the Marien Hospital, and the general results of the practice there pursued. It is interesting in many points of view, as presenting a view of the diseases most prevalent among the poorer classes of the population of St. Petersburg, and their respective mortality; and in the general remarks affixed to the table of the cases under care during the year 1836, in relation to some of the more prominent affections, and the account of the remedies that were found most beneficial in their treatment.

In the year ending January 1st, 1837, there were received as stationary patients, 3426 individuals; of these 118 are described as persons of rank, and noblemen.

This class includes military and civil officers discharged from service, or who, from debt or misfortune, or the insufficiency of their salaries, are unable in case of sickness to pay for medical attendance, medicines and nursing. Individuals of noble birth, but without any possessions or property. The Dworänin and Polish "*Schlächta.*" Poor and unfortunate members of the different professions.

272 are described as discharged and pensioned under-officers and soldiers; 374 free persons, mostly poor mechanics, as well foreigners as natives; 1562 Boors, and 1100, the wives and daughters of all the foregoing classes; 322 patients (173 males, 149 females,) remained under treatment from the preceding year; making a total of 3748 stationary patients treated during the year 1836; of these 2511 (1676 m. 835 f.) were healed, and 927 (644 m. 283 f.) died; leaving 310 remaining under treatment on the 1st of January, 1837.

During the year, the number of ambulatory patients prescribed for, including those remaining from the preceding year, amounted to 42,769, (28,399 m. 14,370 f.;) of whom 23,548 (16,746 m. 6,802 f.) were healed; 3428 were stricken from the list of patients for irregularity of attendance, and 15,793 remained January 1st, 1837.

The lowest number of ambulatory patients prescribed for in any one day, was on the 29th of March, namely, 4 males, 3 females. The highest number prescribed for in one day, was on the 31st of May, 258 males, 39 females. The average daily number of ambulatory patients throughout the year was from 120 to 180.

From the table showing the nature of the diseases with which the patients of both classes were affected, and their respective results, which occupies 18 pages, we present the following abstract, omitting the diseases of the ambulatory patients, and such as remained under treatment at the close of the year.

Inflammations of various parts of the body, chiefly of the viscera, 336 cases; 223 males, 113 females, of which 91 died, and 245 recovered.

Fevers, including 243 cases of catarrhal fever, 10 of puerperal, and 223 of rheumatic, 1687 cases; 1161 males, 526 females, of which 354 died, and 1333 recovered.

Erysipelas, (18 cases affecting the face, and 11 cases gangrenous,) 72 cases; 42 m. 30 f., of which 18 died and 54 recovered.

Rheumatism, 99 cases; 58 m. 41 f.; all recovered.

Diarrhœa, 208 cases; 142 m. 66 f.; 54 died and 154 recovered.

Dysentery, 10 cases; 6 m. 4 f.; 2 died and 8 recovered.

Hæmorrhages, (8 from the lungs, 2 from the stomach, 4 from the uterus,) 14 cases; 5 m. 9 f.; 6 died and 8 recovered.

Consumption, 90 cases; 54 m. 36 f.; all died.

Hæmorrhoides, 7 cases; 5 m. 2 f.; all recovered.

Scurvy, 131 cases; 125 m. 6 f.; 45 died, 86 recovered.

Jaundice, 15 cases; 11 m. 4 f.; all recovered.

Dropsies, 235 cases; 142 m. 93 f.; 151 died, 84 recovered.

Palsy, 10 cases; 6 m. 4 f.; 7 died, 3 recovered.

Gout, 35 cases; 23 m. 12 f.; all recovered.

Chronic affections of the lungs, 48 cases; 29 m. 19 f.; 1 died, 47 recovered.

Chronic affections of the stomach and bowels, 18 cases; 10 m. 8 f.; 1 died, 17 recovered.

Chronic affections of the uterus, 4 cases; all females; 1 died, 3 recovered.

Convulsive diseases, 8 cases; 4 m. 4 f.; 4 died, 4 recovered.

Apoplexy, 4 cases, all females; all died.

Mental diseases, including 5 cases of delirium tremens, 12 cases; 9 m. 3 f.; 4 died, 8 recovered.

Small-pox, 3 cases; all males; 1 died and 2 recovered.

Abscesses and Ulcers, 184 cases; 102 m. 82 f.; 30 died, 154 recovered.

Burns, contusions, wounds, fractures, dislocations, chilblains, 159 cases; 108 m. 51 f.; 10 died, 149 recovered.

Anthrax and gangrene, 21 cases; 13 m. 8 f.; 9 died, 12 recovered.

Caries, 6 cases; 3 m. 3 f.; 4 died, 2 recovered.

Cancer, 9 cases; 2 m. 7 f.; 6 died, 3 recovered.

Indurated and *scirrhus mammæ*, 6 cases, *Palsy of urinary bladder*, 1 case; all females, and all recovered.

Contracted and *distorted limbs*, 8 cases; 6 m. 2 f.; all recovered.

Hemicrania, 3 cases; 2 m. 1 f.; all recovered.

Encysted tumours, 9 cases; 6 m. 3 f.; all recovered.

Paronychia, 13 cases; 8 m. 5 f.; all recovered.

Worms, 3 cases; 1 m. 2 f.; all recovered.

Mercurial tremor of limbs, 2 cases, both males; both recovered.

Fistula in ano, 4 cases; 3 m. 1 f.; 1 died, 3 recovered.

Calculus, urinary, 2 cases; 1 m. 1 f.; 1 died, 1 recovered.

Hip disease, 2 cases; 1 m. 1 f.; both died.

Marasmus of old age, 3 cases; 2 m. 1 f.; all died.

Incarcerated hernia, 2 cases; 1 m. 1 f.; 1 died, 1 recovered.

Abortion, 10 cases; all females; 8 cured, 2 died.

Aneurism of aorta, 3 cases; 2 m. 1 f.; all died.

The foregoing list gives 3496 cases; 2332 males, 1164 females; 900 deaths and 2590 recoveries; adding the number remaining, January 1, 1837, we would have 3806 stationary patients treated during the year, which is 58 more than the number given in the general statement. We can only account for the difference by supposing two or more of the cases to have occurred in the same individual.

The remarks which follow the table of diseases, in relation to the cases of parotiditis, which, during the months of March and April, were very frequently observed in the course of continued and remittent fevers; the very great number of cases of scurvy which presented themselves from the commencement of June to the middle of August, principally in males, with the remedies found most successful in their treatment; the frequent cases of encephalitis, both idiopathic and deutropathic, admitted from the months of August to November; as well as the observations of the author in relation to the cases of concussion of the brain, spinal marrow, &c., consequent upon falls from a height; of abortion, abscesses, angina, delirium tremens, diarrhœa and dysentery; exulcerations of the mammæ; of intermittent, nervous and typhus fever; of tetanus, &c., are all highly interesting; but the length to which our notice of Dr. Von Roos' Report has been already extended, will prevent us from presenting a translation of any portion of them to our readers, or attempting any other than a very brief abstract of the remaining section of the report, "on the surgical operations performed during the year."

Lithotomy was twice performed; both patients were males, one of 12 and the other of 15 years of age. In both cases the operation was successful, and the patients were discharged well.

Lithotripsy was performed on a perfectly healthy male 19 years of age, who had been affected with a urinary calculus for six years. The operation was performed by Professor Bujalsky, on the 25th of April. The calculus was found to measure 12 lines in its shortest diameter. Within half an hour it was pierced in different directions, and reduced considerably in size; it was considered advisable to postpone to a future period an attempt to break it entirely up. Soon after the operation, there occurred a severe inflammation of the bladder and urethra, which was removed by an appropriate treatment. As the patient suffered much at every effort to void his urine from the retained calculus, at the end of three days it was proposed to repeat the operation, but upon attempting to introduce the instruments, so great a degree of sensibility was found to exist in the urethra and bladder, that Professor B. determined upon removing the stone by the lateral operation. Many fragments of stone were removed, one of which measured 13 lines in diameter. Subsequently to the operation, inflammation of the bladder again occurred, and the patient died on the 19th of May.

Amputation of the right forearm was performed upon a woman 54 years of age, in consequence of caries of bones of the forearm and wrist. The patient was discharged well.

Amputation of the right arm was performed on a man 20 years of age, in consequence of an abscess and destruction of the elbow joint, following a contusion of this part. Four months after the operation the patient died with hectic fever.

Amputation of the right leg was performed on a female 40 years of age, for an extensive ulcer with caries of the tibia near the ankle joint. Three months after the operation the patient died with hectic fever and colliquative diarrhœa.

Amputation of the right leg was performed on a lad 19 years of age, for caries of the ankle joint. The stump healed quickly. The patient remained in the hospital to the close of the year with an abscess of the sacral region.

Extirpation of scirrhus mammæ was performed in three cases. In all, the operation was successful.

Excision of inferior lip for cancer was performed in 3 cases; 2 m. 1 f.; in all, the operation was successful.

Suture of vesico-vaginal fistula; a young woman of healthy constitution, residing in a village near St. Petersburg; in her first labour, which was difficult, from the want of proper assistance suffered a rupture of the vagina and bladder, immediately behind the neck of the latter. Three months subsequently, she was received into the hospital with an oblong, transverse, vesico-vaginal fistula, into which the end of the fore finger could be introduced. The urethra was so contracted as to render it difficult to pass a middle sized (No. 6) elastic catheter into the bladder. Professor B., after paring away the fistulous edges of the opening, secured them in contact by two ligatures tied over a roll of linen. An elastic catheter was introduced into the bladder, through which the urine was allowed to pass for five days. The operation was, however, unsuccessful; the fistula continued, and the patient was discharged uncured.

Extirpation of encysted tumours was performed in nine cases; and *extirpation of a finger and a toe* was performed, each one time.

Operation for hydrocele, by longitudinal incision, was performed once, and successfully.

Trepaning. On the 28th of December this operation was performed for the removal of a caries of the os frontis. An unmarried female, 38 years old, was seized, towards the end of October preceding, with a nervous fever, accompanied with vertigo, stupor, loss of appetite, costiveness, and a sluggish condition of all the functions of the body. In the course of the fever a small ulcer appeared upon the left side of the frontal bone, at the edge of the hairy scalp. Of this the patient made no complaint, and which attracted the notice of the physician in attendance only by the fungus granulations to which it gave rise. Upon recollection, the patient stated that she had been struck by a splinter of glass at the spot where the ulcer occurred, and by which she presumed it was produced; a probe introduced into the ulcer showed that the bone was bare and carious; an incision being made, it was found that an opening existed in the bone, through which a quantity of matter freely escaped. The diseased portion of bone was removed by the trephine. The dura mater beneath was found to be thickened and perforated by an opening, through which pus was discharged. Two days after the removal of the bone, this opening in the dura mater was enlarged by the knife, and the finger could be readily passed down to the substance of the brain. The discharge of pus soon diminished; the wound assumed a healthy aspect, and the febrile symptoms under which the patient had laboured entirely ceased; but on the night of the 6th of Janunry, the patient suddenly expired.

Upon examining the brain a large abscess was discovered in the great anterior lobe, from which an opening extended forwards, passing through the dura mater and os frontis.

Condyloma clitoridis.—A soldier's wife, of a very sickly and infirm constitution, was admitted, three weeks after her confinement, with a tumour of the size of a man's fist, and of a bright red colour, extending beyond the external genitals. It was attached by a slender pedicle within the external labia, below their frenum, in the situation of the clitoris. According to the patient, this tumour had existed for a year, and probably longer. The external genitals, and the orifice of the vagina were studded with moist syphilitic condyloma. Prof. B. decided that the tumour was a condylomatous enlargement of the clitoris, of a very unusual magnitude. The patient was placed under an antiphlogistic treatment, which, at the end of three weeks, had to be discontinued in consequence of the extreme exhaustion of the patient. The tumour, which now appeared to be somewhat reduced in circumference, was excised (*ausgeschnitten.*) Soon after the operation a slow fever occurred, under which the patient sank on the 3d of July. D. F. C.

Art. XIX.—*Pharmocopœa Danica, regia auctorate a Collegio Sanitatis Regio Hafniensi edita.* Hafniæ: 1840.

Danish Pharmacopœia, edited, with the royal authority, by the Royal College of Health of Copenhagen. Copenhagen: 1840. 8vo., pp. 316.

This Pharmacopœia, like most other works of the kind, consists of two parts, the first containing a catalogue of medicines in the state in which they are purchased by the apothecary—the second giving formulæ for the preparations. It differs from some in offering brief rules for the collecting, drying, and preserving of vegetables, and for the various pharmaceutical operations, together with succinct descriptions of the medicines directed, and the prominent tests of their genuineness and purity. The work is in Latin; but the Danish names of the medicines are also given, so as to obviate the danger of mistake among those not well informed. The medicines which it is deemed necessary that every shop should be supplied with, are indicated by a sign prefixed to their names, while those of secondary importance are left unmarked. This is a good plan, though, as appears to us, inferior to that of two distinct catalogues adopted in the United States Pharmacopœia. The arrangement of the medicines is, as in our Pharmacopœia, strictly alphabetical; and we think that this, all things being considered, is the most convenient. The particular substances directed are mostly the same as those in use with us, but we observe some that are scarcely to be found in our shops, at least in the form of medicines. Among these may be mentioned formicæ or ants, out of which they prepare a tincture. The nomenclature is not such as we can altogether approve, the names of the chemicals being, in some instances, founded on exploded notions of their composition, and numerous antiquated titles being retained which have been abandoned in the best modern pharmacopœias, such as balsamum opodeldoc, balsamum universale, balsamum vitæ Hoffmanni, elixir antarthriticum, emplastrum Manus Dei, morsuli contra vermes, &c., which, if not entirely rejected, should have been introduced merely as synonymes. The work is much less elaborate than the French Codex and some of the German pharmacopœias, but is somewhat fuller than those of Great Britain and the United States. Of the merits of its several formulæ, as those which are peculiar to it are not likely to be employed in this country, it is scarcely necessary to speak. They appear to have been drawn up with care, and are no doubt adapted to the wants of the country, whose pharmacy they are intended to regulate. G. B. W.

Art. XX.—*Lectures on the Theory and Practice of Physic.* By William Stokes, M. D., Lecturer at the Medical School, Park St., Dublin; Physician to the Meath Hospital, &c. &c. Second American edition, with numerous notes, and twelve additional lectures. By John Bell, M. D. &c. Philadelphia: 1840. 8vo. pp. 692.

Of the character of Dr. Stokes's Lectures, our readers have had an ample opportunity for forming a correct estimate; the major portion of them having been transferred to our quarterly summary soon after their publication in the London Medical and Surgical Journal, where they originally appeared. They, unquestionably, possess throughout great merit,—presenting a concise, but at the same time extremely clear and attractive summary of the leading views of the most distinguished modern pathologists, especially those of the French school in relation to the phenomena, character, seat, diagnosis, and morbid anatomy of the several diseases, which they embrace; together with a very judicious and instructive exposition of their therapeutical management, deduced from the observations of the most enlightened and experienced practitioners of Europe.

The careful and cautious manner in which the several subjects of these lectures have been investigated by the author—his evident familiarity with the recorded observations and experience of his predecessors and contemporaries, as well as with the character, progress, and treatment of the several forms of disease described by him, from his own personal observations and experience, give to the expositions of Dr. Stokes, whether pathological or therapeutical, a degree of authority possessed by but few of the general summaries in our possession.

In the edition of these lectures before us, independently of a variety of important notes, more especially in reference to ileitis in connection with typhoid fever, sporadic dysentery, bilious colic, inflammation of the cœcum, the two last being diseases not embraced in the lectures of Dr. Stokes—hepatic abscess, encephalitis illustrating phrenology—softening of the brain, apoplexy dependent on hypertrophy of the heart; paraplegia, neuralgia, scrofula and intermittent fever—Dr. Bell has added twelve lectures on typhus, congestive, and the eruptive fevers, rheumatism, acute and chronic, and chronic laryngitis:—all of which, it would appear, to adopt the language employed by the editor in his preface:—

"Have been written in the same spirit with that of the original lectures—viz: an avoidance of speculative etiology, emphasis on diagnosis deduced from morbid anatomy, and a recommendation of therapeutics, simple yet energetic, so far as they are indicated by the phenomena of the disease, and the repeated enforcements of experience."

In relation to his lectures on congestive fever, Dr. Bell remarks, that, it is believed, they will be acceptable to his younger professional brethren, particularly to those residing in the southern and western states of the union.

"Even the fulness of description and occasional iteration of important points in pathology and therapeutics, as well as the remarks on collateral topics, especially the spurious hepatic pathology, and the mercurial practice will, he hopes, find favour in consideration of their aim and tendency, although they may not have been discussed with entire success. It will not be thought presumptuous in him to have endeavoured to open the whole field of observation and inquiry on congestive fever, to correct serious misapprehensions of its character, and to prepare a way for its better treatment, by dwelling on once familiar but, of late, forgotten truths."

We feel great confidence, as well as pleasure, in recommending the present edition of Dr. Stokes's lectures as a valuable addition to the systematic works on the theory and practice of medicine now in general use—as well for the instruction of the student, as for the frequent reference of the medical practitioner.

D. F. C.

Art. XXI.—*New Remedies: The Method of Preparing and Administering them; their Effects on the Healthy and Diseased Economy, &c.* Prodesse quam conspici. Third edition, with numerous modifications and additions. By Robley Dunglison, M.D., Sec. A. P. S., Prof. Inst. Med. and Mat. Med. in Jefferson Medical College, &c., &c. Philadelphia: Lea & Blanchard, 1841. 8vo., pp. 538.

The favourable opinion we expressed of this work when it first appeared, (see No. of this Journal for May, 1840, p. 172,) has been confirmed by the judgment of the profession, as is shown by the very short period in which the edition has been exhausted. In preparing a new edition, the author, as he informs us in his preface, "has subjected it to an entire revision, has modified in certain respects the arrangement, and altered the nomenclature so as to cause it to correspond more nearly to that adopted in the Pharmacopœia of the United States.

"In the space of time that has elapsed since the appearance of the last edition, opportunities have occurred for testing farther the value and the method of preparing many of the articles. The results of these observations have been added, and especial care has been taken to insert every novelty of practical interest to the physician and pharmaceutist. Fresh articles have likewise been introduced into notice, some of which constitute useful additions to the Materia Medica. These have been incorporated in their proper places; with other therapeutical agents that were omitted in the preceding edition; for example:—*Iodide of Ammonium, Iodide of Arsenic and Mercury, Cimicifuga, Lactate of Iron, Protocarbonate of Iron, and Monesia.*"

These changes have added to the value of the work, and cannot fail to secure for it an extensive circulation.

Art. XXII.—*The American Medical Almanac, for* 1841, *designed for the daily use of Practising Physicians, Surgeons, Students, and Apothecaries; being also a Pocket Memorandum and Account Book, and General Medical Directory of the United States and the British Provinces.* By J. V. C. Smith, M. D., Editor of the Boston Med. and Surg. Journal. Vol. III, continued annually. Boston: Otis, Broaders & Co., 1841. 18mo., pp. 148.

The volume of this work for the present year, contains a short account of all the medical schools in the United States; a number of interesting statistical papers; brief sketches of the sciences of Auscultation and Auscultatory Percussion, the former by Dr. Bowditch, of Boston, the latter by Dr. Macgowan, of New York; and several other short papers of interest.

The statistical account of the most important surgical operations performed in Hartford, Connecticut, for the last ten years, preceding January 1, 1840, by Dr. A. Brigham, affords some curious information, and which may, as Dr. B. observes, "serve to undeceive and benefit young physicians, who expect to obtain considerable income from surgical operations, and consequently neglect to qualify themselves so thoroughly as they should, to perform well the other and every day duties of their profession, and upon which they must chiefly rely for support."

It appears that Hartford county contains 21 towns and numerous villages, and a population of over 50,000. During the ten years comprised in Dr. B's. account, there were performed in the county 22 amputations, ten of which were of the thigh, four of the leg, and eight of the arm; 5 operations of trephining, two for strangulated hernia, one for aneurism, a few amputations of the breast in females, several operations for hydrocele, and a considerable number for the removal of enlarged tonsils.

"Though the county is a healthy one," says Dr. B., "and comparatively but few poor people in it, yet the surgical operations alluded to have been mostly among the poor. Five of the ten persons who underwent amputation of the thigh, were too poor to pay any thing, and all but one, of those who had the leg amputated. But two of the eight cases of amputated arm were able to pay, and only *one* of those trephined. The cases of hernia occurred in poor people, but the friends paid a little. The case of aneurism was in a town pauper. The whole sum realized from all the above-mentioned amputations, trephinings, and operations for aneurisms and hernia, is less than $350.

"There are 76 physicians in the county, most of whom obtain a good support from their professional business; but as is very evident from the above account, they derive but little income from important surgical operations."

ART. XXIII.—*The Dublin Dissector, or Manual of Anatomy, comprising a description of the Bones, Muscles, Vessels, Nerves, and Viscera; also the Relative Anatomy of the Different Regions of the Human Body, together with the Elements of Pathology.* By ROBERT HARRISON, A. M., M. B. T. C. D., Member of, and one of the Professors of Anatomy in the Royal College of Surgeons in Ireland, &c., &c. First American from the fifth enlarged Dublin edition. With Additions by Robert Watts, Jr., M. D., Prof. of Anat. in the College of Phys. & Surg. in the city of New York. New York: J. & H. G. Largely. Philadelphia: Haswell, Barrington & Haswell, 1840. 12mo., pp. 541.

THIS work has enjoyed an established reputation in Great Britain, and we have little doubt that it will secure the same in this country. Some useful additions have been made by the American editor; and there is an Appendix, by another writer, containing "Directions for making dried preparations of the arteries and veins," which will prove valuable to the student.

SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Case of Palsy of the Face, illustrative of the Functions of the Lingual and Glosso-Pharyngeal Nerves.* By M. VOGT.—A woman between 30 and 40 years of age, corpulent, and in good health, contracted a paralytic affection of the left side of the face, in consequence of leaving her bed-room window open during the night. It is unnecessary to enter minutely into the details of the case; but it was distinctly recognized to be a case of paralysis, not only of the third branch, but of the entire trifacial nerve, with the exception, perhaps, of the muscular branch. Not only the chin and the half of the tongue, but all the left side of the face, were insensible. The conjunctiva of the left eye could not be irritated by means of needles; no tears were excited by this means. The external part of the ear was insensible to the touch, as well as a large portion of the posterior and lateral parts of the head. It was difficult to ascertain how far the muscular parts were paralysed. She said she could chew as well as ever; but whenever the mouthful escaped to the left side of the mouth she stopped chewing, as she was not aware of its presence there, and supposed that it had fallen out of her mouth. It is more than probable that the muscles of that side of the face had been paralyzed, and that mastication was effected by the unparalyzed muscles of the other side of the face; as mastication was performed very irregularly. One very remarkable circumstance was noticed, which was, that the left side of the tongue, though it had lost its sensibility, preserved its sense of taste quite entire. The woman was cured by means of electricity in six weeks.—*Edinburg Med. and Surg. Journ.* Oct. 1840, from *Müller's Archiv.*, Jan. 1840.

2. *Ganglia of the Human Heart.*—M. REMAK, after having for a long time doubted the existence of nerves in the substance of the heart, has at length succeeded not only in demonstrating them, but also their nature; they are chiefly derived from the sympathetic nerves. M. Remak also discovered numerous ganglia, almost microscopical, in the substance of the heart of many of the domestic animals, and on extending his inquiries to that of man, found the same structures present there also. These ganglia he found in the transverse furrows of the heart, especially between the auricles and ventricles, where the nervous plexuses are met with. They are very small, but are easily recognized, by the microscope, to be ganglionic in their structure. It is from this peculiar structure, probably, that the activity of the heart, independent of the brain, may be explained. *Ibid*, from *Wochenschrift fur die gesammte Heilkunde*, 1839, No. 10.

3. *Case of Absence of one Lobe of the Cerebellum.*—DR. GREENE has recorded an example of this in the *Dublin Journ. of Med. Sci.*, (July, 1840,) occurring in a lad 20 years of age, who died on the twelfth day of fever in the Hardwicke hospital. The patient was well made and muscular, and had the perfect use of his limbs; but was deaf and dumb from his birth. The genital organs were well deve-

loped, and cicatrices of ulcers existed in each groin. The left lobe of the cerebellum was found to be altogether wanting; and the left *crus cerebelli* consisted merely of a small tubercle connected with the pons. The right lobe of the cerebellum and the corresponding crus were healthy. The *crus cerebri* of the left side was smaller than that of the right, and the annular protuberance, owing to the different development of its left side, was irregular in its form, and placed obliquely, its longest diameter being from behind forwards, and to the right side. The origins of the nerves were normal. The right occipital fossa was remarkably shallow, and the *foramen magnum* was placed obliquely, its antero-posterior diameter being thrown towards the right side. *Ibid.*

4. *On the Anatomical Relation of the Blood-Vessels of the Mother to those of the Fœtus in the Human Species.* By Dr. John Reid.—In this communication, it was proved, by preparations laid on the table, that numerous tufts of the placental vessels pass through the decidua, and enter by the open mouths of many of the uterine venous sinuses of the mother. Some of these tufts only dip into the open mouths of the sinuses; others extend their ramifications half an inch, and even in some rarer cases, more than an inch from the point at which they enter. That these tufts found bathed in the maternal blood of the uterine venous sinuses, are prolongations of the fœtal placental vessels, was proved both by injection and by microscopic examination. Dr. Reid then proceeded to state, that on examining the placental vessels under the microscope, each minute branch of the umbilical arteries is bound up with a single branch of the umbilical vein, and that they go on dividing and subdividing in the same manner—each subdivision consisting of an artery and a vein so closely bound together, as to resemble a single vessel, when seen through the microscope in their uninjected state. All of these branches—each including an artery and a vein—terminate in blunt extremities, and there is no cellular tissue filling up the intervals between them. These blunt extremities, in which the branches of the tufts end, form the termination of the arteries, and the commencement of the veins. The inner coat of the venous system is reflected upon the placental tufts which project into the uterine sinuses, and is prolonged over the surface of all the placental vessels, forming sheaths enveloping each branch of these vessels, and thus constituting a kind of sac with numerous and intricate folds, or fringes projecting into its interior. Into this sac, the blood of the mother is poured by the curling arteries, and returns by the prolongations of the uterine veins. Each of the uterine sinuses into which the placental tufts project, may be considered a minuter representation of the structure of the placenta, for we have there fœtal placental vessels resembling the branchial vessels of aquatic animals, covered by a prolongation of the inner coat of the vascular system of the mother, and hanging in a cavity filled with maternal blood.—*Report of Proceedings of British Association for Advancement of Science*, in Athenæum, Oct. 3, 1840.

5. *On the Anatomy of the Medulla Oblongata.* By Dr. John Reid.—The object of this communication was to point out the relative position of the motor and sensitive columns of the spinal chord, as they pass through the medulla oblongata and pons varolli, and the attachment of the different motor and sensiferous nerves to these columns. Dr. Reid produced preparations of the medulla oblongata, to show that the decussation of the pyramidal bodies is formed by the greater, and in some cases nearly the whole, of the fibres constituting each of these eminences passing into the posterior part of the middle column of the opposite side. None of these decussating fibres run into the anterior column of the opposite side, nor is there any decussation in the medulla oblongata; besides, on tracing the column which is connected with the olivary body, and which may be termed the olivary column, we find that as it passed downwards, it approaches closely to the anterior median fissure, immediately below the decussation of the pyramidal columns, and affords attachment to many of the roots of the motor nerves. On tracing this olivary column upwards, it is found to expand over the olivary body, affording origin to the hypoglossal and abducens along its anterior

margin, and to the parts close along its posterior margin. Part of this column passes upwards to the corpora quadrigemina, affording origin to the smaller root of the 5th and to the trochleator. Dr. Reid also pointed out how the spinal accessory and part of the filaments of the par vagum may be connected with the motor column.—*Ibid.* October 17, 1840.

6. *New Observations on the Structure of the Gastro-intestinal Mucous Membrane, and more particularly of the Gastric and Intestinal Glands.* By Prof. Allen Thompson.—This paper was illustrated by a series of preparations of the gastric and intestinal glands of man, and some of the lower animals. After giving a sketch of the recent progress of the investigation of the structure of the mucous membrane and its glands, and alluding more particularly to the researches of Boyd, Boehm, Bischoff, Purkinje, Henle, Wasmann, and Baly, the author gave a general description of the structure and distribution of the gastric and intestinal glands in the human subject at different ages, and in the following animals, viz. the pig, sheep, and ox, horse, dog, cat, and lion, badger, porpoise. The author then entered into a detail of some observations which he had recently made on the gastric glands, and on the solitary glands of the large intestine, from which he forms the conclusion, that at an early period of life these glands have all the form of closed vesicles, and that as life advances in the early years they gradually become open. The author then stated, that he had frequently observed distinct central apertures in the vesicles composing the glands of Peyer in the pig, sheep, horse, and occasionally, but more rarely, in the adult human subject, never, however, in the child nor young subject. The author stated his opinion that the apertures surrounding the vesicle in the form of a zone, do not lead into the cavity of the vesicle. The author gave a minute description of the structure of these glands, and concluded by calling attention to the three distinct points which formed the subject of his inquiry, viz. 1st, The closed vesicular origin of the gastric glands in the child, and their occasional vesicular structure at a more advanced period of life; 2d, The closed vesicular condition of the solitary glands of the large intestine at the period of birth, and the occasional occurrence of this condition at a more advanced stage, and 3d, the occasional open condition of the vesicles of Peyer's glands. He farther adverted to the bearing of these observations on the theory of secretion in general, more particularly that recently offered by Henle, on the probable uses of the intestinal glandular secretions in the economy, and on the changes of these glands in the diseased condition.—*Ibid.* 17th October, 1840.

MATERIA MEDICA AND PHARMACY.

7. *Oil of Ergot—the Mode of Preparing it—its Physical and Chemical Properties.*—Mr. Samuel Wright gives the following process as a convenient one for preparing the oil of ergot for ordinary purposes:—Digest the ergot in liq. potass. at a temperature of 120°–150°, until a perfect saponaceous solution be formed. The liquid is then to be diluted with half its weight of water, exactly neutralized with sulphuric acid, and submitted to distillation from a saline or an oil bath. The product is white, adhesive, and fatty-looking, almost free from empyreuma, and nearly tasteless.

The readiest and best, though unfortunately, the most expensive way of obtaining this oil, is, he says, by percolating ergot in a state of fine powder, with sulphuric ether. By allowing the ether to evaporate spontaneously, the oil of ergot is left in its purest form.

As thus prepared, he adds, it usually consists of two portions—the one, colourless and translucent, the other, having a reddish-brown hue. The latter character is an acquired one, and simply dependent upon the age of the ergot. In old specimens, the oil is coloured throughout, and often deeply; in recent ones, on the contrary, it is not unfrequently entirely free from colour.

Its taste is oily, and slightly acrid, its odour is similar to that of ergot, though more agreeable, and neither heightened by acetic acid, nor destroyed by long contact with a clear plate of copper or of iron. When heated, it blackens rapidly, acquires a disgusting empyreumatic odour, like that of an old tobacco pipe, and an acrid biting taste. If the heat be long continued, complete volatilization takes place; but if the oil be suffered to cool, it thickens, solidifies slowly, and ultimately becomes resinous.

By long exposure to light and air, at a moderate temperature, it assumes a reddish-brown colour, though it is little altered in either smell or flavour. The purple hue of ergot appears to be owing to the action of light and air upon the oil, aided by the free phosphoric acid. By mixing the colourless oil with flour and a little acid, and exposing the mass to air and sunshine for some weeks, I have succeeded in producing the distinct colour of ordinary ergot. It will be remembered that the latter, when growing, is never darkened so long as it is completely shielded by the glume.

Oil of ergot is of less specific gravity than water, and when these are agitated together, the latter becomes slightly odorous, and the former is rendered somewhat opaque. It is soluble in all the ethers, alcohol, naphtha, and bisulphuret of carbon, from which it is imperfectly separated on the addition of water. It is dissolved by all the essential oils, and mixes intimately with some of the fixed ones, particularly almond and olive oil. It is likewise soluble in kreasote, caustic alkalies, earths, and ammonia. With the latter substances, it forms a soapy solution, from which it may be separated by an acid. Sulphuric, nitric, and hydrochloric acids in the dilute form, have little action upon it, but, when concentrated, they convert it into a deep brown or black mass. When long exposed to light and air, at a moderate temperature, the oil thickens, deepens in hue, and diminishes in strength; yet, if kept in a stoppered bottle, it is patient of preservation, and will retain its activity for years. On this account, as also from the fact of its embodying all the active properties of ergot in a safe and manageable form, Dr. W. is persuaded it will be found a much more advantageous officinal preparation than the crude drug.—*Edin. Med. and Surg. Journ.*, July, 1840.

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8. *On the Hydrocyanoferrate of Quinine.*—Notwithstanding the valuable febrifuge virtues of the sulphate of quinine, it is well known that it occasionally fails. In such cases the hydrocyanate of quinine has been used with good effects. But as this is a salt subject to decomposition, Signor BERTOZZI of Cremona, has proposed to substitute the hydrocyanoferrate of quinine, the powers of which over the worst forms of intermittent fever have been completely established.

Dr. Zaccarelli has prescribed this new medicine in a great number of cases in place of sulphate of quinine. It is found to cut short tertian and quartan fevers; and, what is well worthy of the attention of physicians, it has principally succeeded in cases where the sulphate of quinine has failed. Dr. Carioli has also confirmed the febrifuge properties of this preparation.

The following is given by Bertozzi as the most economical process for obtaining it. One part of sulphate of quinine is to be triturated in a glass mortar to an impalpable powder; a part and a half of the ferro-prussiate of potash, previously dissolved in six or seven parts of distilled water, is to be mixed by careful agitation, and the whole exposed in a flask to heat, stirring the mixture carefully until it arrives at the boiling point. In proportion as the liquid becomes transparent, there is precipitated to the bottom and sides of the flask a substance of a greenish-yellow colour, having an oily consistence. Having poured off the liquid portion, this substance is to be washed with distilled water, and then dissolved in very pure alcohol at 100° Fahr., and immediately filtered. On evaporating the alcohol, a mass, confusedly crystallized in needles, is left, the weight of which amounts to three-fourths of the sulphate of quinine used. This is the hydrocyanoferrate of quinine.

When in small fragments this substance is of a pea-green colour, and of an intensely bitter taste. It dissolves in cold, but better in hot alcohol, and is precipitated from its solution almost entirely by water. It is decomposed by sulphuric acid, and by the tincture, infusion, and decoction of cinchona. It has been given in doses of three grains and a half, repeated as occasion required.—*Dublin Journ. Med. Sci.* July, 1840.

9. *Tonic Astringent Pills of Walch.*—The following is the formula for these pills:—℞. Terebinth, Venet. Extr. Gentian. āā ʒij; Ferri Sulphat. Kino āā ʒiss. M. To be made into pills of a grain and a half each. These pills are said to be very efficacious in the cure of gonorrhœa and of chronic leucorrhœa. The dose is four pills three or four times a day.—*Journ. des Connaiss. Méd. Prat. et de Pharmacologie*, June, 1840.

10. M. Trousseau *on the Pommade Ammoniacale as a Vesicant.*—The formula in the French Codex for the preparation of *Gondret's* Ammoniacal Pommade is as follows:—Take of mutton suet one ounce, lard one ounce, and liquid ammonia (of 25° strength) two ounces. Melt the suet and lard in a wide mouthed bottle, and then, having added the ammonia, stopper it and shake the mixture well together. Keep the bottle closed in cold water—shaking it occasionally—until the pommade has become quite cold.

M. *Trousseau* observes, that the pommade made according to these directions, is generally much too hard and consistent for use, at least unless the weather be warm. He proposes two different formulæ, one for summer and the other for winter. The former is to use three parts of lard, one of suet, and four of ammonia; and the latter to use equal parts of lard and of the ammonia.

The *pommade*, which is met with in most druggists' shops in Paris, is far too weak, in consequence of its having been prepared with ammonia of insufficient strength, and probably also from its having been kept too long.

There may be another reason still: if the ammonia be added while the fatty matters are very hot, a great portion of it must be volatilized, and the pommade is necessarily weakened.

In applying this vesicatory, some recommend that a portion be put into a thimble, or in a short glass tube, and held firmly on the skin for some time, to prevent the escape of the ammoniacal vapour; while others advise, that it be spread directly on the part which is then covered with a small portion of diachylon plaster.

M. *Trousseau* disapproves of both methods, as "it is indispensable," he says, "that the effects of the application should be visible all the while." When first applied, the patient experiences a sense of coldness in the part; then a minute or two afterwards a slight burning heat, which gradually increases for three or four minutes, at which time it is at its maximum: it then remains stationary, and sometimes even begins to abate, although the *escharification* of the skin is going on all the time.

We must not, therefore, judge of the effects of the ammonia solely by the effects it produces.

The rule given by M. *Trousseau*, for regulating the length of time for its application, is to watch the appearance of the red circle around the part: whenever this is observed, the pommade should be removed. It is sometimes even not necessary or proper to wait until the red areola be observed, as the epidermis may be raised before it appears.

The length of time necessary for the pommade producing its full effects, varies much according to the part on which it is applied: sometimes it will vesicate in two minutes, at other times ten or twelve minutes are required.

As the inflammatory areola does not always make its appearance, M. *Trousseau* recommends that the pommade be wiped off at the end of five or six minutes, and re-applied if necessary; this may be repeated until the epidermis begins to be raised. We are never to continue the application until any appearance of a vesicle or blister is observed; but only until we find that the epidermis can be detached by rubbing it gently with the finger. We frequently find that it can then be removed in one piece, and that the chorion beneath can be fairly exposed. *Now this is the very condition that is desired.* The dermis is not escharified in any degree; but continues to retain its absorbing energies, so that we may depend upon the success of any endermic medication that we may wish to try.

Should the pommade have been so long applied, that a complete bulla has been raised, it will generally be found that the dermis, from having been too much irritated, does not absorb very readily; and, moreover, that a cicatrix or mark is left after the blister has been healed. This latter consideration is not to be neglected, seeing that the pommade is so extensively used in the treatment of facial neuralgia in both sexes.—*Med. Chir. Rev.*, July, 1840; from *Journal des Connais. Méd. Chirurg.*

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11. *Lactate of Iron.*—This new preparation of steel has been extensively tried by some of the leading hospital physicians in Paris, and has met with their unqualified approbation.

The following extracts from a memoir by MM. *Gelis* and *Conté* will be sufficient to introduce it to the notice of our readers.

"Several reasons have induced us to select the combination of the protoxide with the lactic acid: this acid is widely diffused through the economy; there is, perhaps, not one part of the body which does not contain a notable quantity of it. *Berzelius* has detected it in muscles, in milk, and in all the secretions; the perspirable matter owes its acidity to its presence, and a considerable quantity is found in the urine. The solvent power of the gastric juice is perhaps mainly attributable to the presence of the lactic acid: the traces of the hydrochloric are, it is now generally admitted, very feeble.

"It must, therefore, be the lactate that is formed in the stomach, when any steel medicine is swallowed.

"It is easily prepared by treating iron filings with diluted lactic acid. The water is decomposed, hydrogen is evolved, and the oxygen combines with the iron. When the evolution of the gas ceases, the solution is filtered and then evaporated until a pellicle forms on the surface: the salt chrystallises on cooling.

"The lactate is not very soluble in water, and a high heat decomposes it. It is not readily affected by exposure to the air.

"It may be administered in the form of pastilles, drops, or lozenges: the sugar which enters into the composition of these prevents the further oxydation of the salt. The dose is from four to fifteen grains.

"The authors adduce several cases of chlorosis and other states of the system which are usually relieved by steel medicines, drawn from the practice of MM. *Bouillaud*, *Rayer*, *Beau*, &c. in which the lactate was administered with excellent effects: in some it succeeded after the usual ferruginous preparations had been fairly used without benefit.

"M. *Bouillaud* has reported most favourably of this new medicine to the Academy: he has used it in 21 cases, and in all it produced excellent effects. It seems to have a marked influence in increasing the appetite. The dose was from six to fifteen pastilles, (five centigrammes in each: perhaps each patient took eight or ten grammes in all.)

"Professor *Fouquier* confirmed the favourable report communicated by M. *Bouillaud*. He stated, as his opinion, that the lactate would become one of the most valuable and standard ferruginous preparations used in medicine."—*Med. Chirurg. Rev.* Oct. 1840.

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12. *On the Therapeutic and Chemical Properties of the Matias Bark.*—Dr. M'Kay presented to the Medical Section of the British Association for the Advancement of Science, a paper on this subject. The plant from which the bark was obtained, he stated, grew in great abundance in South America; but he was unable to give its botanical characters. From what he had heard he supposed it to belong to the genus Wintersonia. In its native country it was extensively used as a substitute for cinchona bark in intermittents. It was found to contain an intensely bitter extractive matter, to yield on distillation two distinct essen-

tial oils, differing in specific gravity, soluble in alcohol and æther, but very sparingly so in water. The principal characteristic substance derived from it was a bitter resinous matter; no alkaloid was discovered to exist in it. Specimens of the bark, its extract, the essential oils, tincture and resinous matter, were exhibited. The principal therapeutic properties were stated to be tonic, aromatic, and astringent. Dr. M'Kay also stated that it had been exhibited with marked success in dyspepsia accompanied by loss of appetite, which it quickly restored,—in phthisis, where tonics were admissible, in which it supported the strength, and prevented rapid sinking; in dropsy it was found to be a valuable adjunct to diuretics; in intermittents it was found to be a valuable substitute for the cinchona. It was also found serviceable in such cases of hemicrania, as permitted the use of quinine.

Dr. Newbigging, from extensive use of the drug, corroborated the statement made of its therapeutic virtues.—*Athenæum*, Oct. 1840.

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13. *Therapeutic Effects of Croton Oil in certain Affections of the Nerves.*—Dr. Newbigging in a paper read before the British Association for the Advancement of Science, observed that for some time the only action the croton oil was supposed to possess on the animal economy, was that of active purgation, until Sir Charles Bell pointed out its effects on neuralgia. Not that it would be found to remove the affection in all cases, which was impossible in those depending on certain organic changes. He then detailed a number of cases to prove that it possessed a specific power over the nervous system, independent of its general action as a purgative. The diseases in which the power was exhibited were severe sciatica, which had baffled every other treatment; convulsions in children, and epilepsy, many cases of which it cured; and even in those depending on organic affections of the brain, it rendered the paroxysms less frequent and more moderate. In a case of severe laryngismus stridulus occurring in a child nine months old, Andral exhibited it in minute doses with complete success.

Dr. Abercrombie said he had long used it extensively in affections of the head, and from his experience of it he thought it might possess specific power over the nervous system. As the disease laryngismus stridulus was alluded to, he would mention a remedy he had found very valuable in its treatment, which was a combination of carbonate of iron and rhubarb with musk.—Sir C. Bell had found several forms of severe neuralgia, particularly occurring in the extremities, as in the finger or toe, over which croton oil had no power. It was in facial neuralgia that it proved most serviceable, or in neuralgia occurring elsewhere, accompanied by some indication of cerebral affection. When he considered the great extent of the intestinal track, and that those diseases may depend on sympathy with different parts of it, he was prepared to expect the necessity of using different purgatives which were known to act principally on different portions of the intestines.—*Ibid.*

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

14. *Ammonia a Cure for Drunkenness.*—M. Nonat has recently reported to the Medical Society of Paris, two cases of drunkenness successfully treated by ammonia given by the mouth and rectum. One of these had been bled and vomited, and his condition was almost desperate. Sixty drops of ammonia in two draughts cured him. M. N. saw at the Hotel Dieu, a man who had drunk a pint and a half of brandy; he appeared at the point of death. He was made to breathe the vapour of ammonia, and the fluid was given in injection, for he could not drink. The bowels were freely emptied and the patient was cured.

M. Prus also related the case of a man 60 years of age, who was taken to Bicetre dead drunk. M. P. saw him in the morning about nine o'clock and prescribed four drachms of acetate of ammonia in a glass of water. Before six o'clock the patient was perfectly sober.—*Journ. des Connaiss. Méd.*, May, 1840; from *Bull. Gén. de Thérap.*

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15. *On Pain of the Back in Intermittent Fever.*—Dr. Kremer, of Aix-la-Chapelle, in a work on intermittent fever published in 1837, asserts, that in all the intermittent fevers he has had an opportunity of observing, there exists at the situation of the first dorsal vertebra, a more or less severe pain on pressure. In order to perceive the symptom, the pressure must be made from behind forwards, with the fingers upon the spinous process of the individual vertebra, not upon several vertebræ together; for in this latter case one bone is less affected in its relations with the others than in the former. If the intermittent fever is considerable, or old, or masked, pressure on the first dorsal vertebra, by giving pain, will suffice to evince the existence of fever. In simple or mild cases, the pain may be but trifling, and may require, particularly in phlegmatic individuals, that the attention shall be directed to it; and in order to render it evident, pressure should be first made on the first cervical vertebra, then on the last dorsal, and then lastly on the first dorsal, when the patient may be asked if he feels any difference in the sensations produced. The pain exists during the paroxysms, as well as in the apyretic interval, is stronger in epidemic than in sporadic intermittent fever, exists in all forms, and continues during the sequelæ.

Dr. Grossheim has examined fifty cases of intermittent, with a view of testing the correctness of the above opinion, and the following are the results of his observations:—"1st, pain on pressure on some part of the spinal column is a constant symptom of intermittent fever, except in those cases in which the ligaments of the vertebræ have become by age or disease so rigid that they will not yield to pressure. 2. There is no definite locality to this pain; it may be situated in any part of the column, but is most frequent in the middle of the dorsal portion, especially in quotidian intermittents. 3. The extent of the pain also varies considerably; one or two vertebræ only may be tender; and the pain rarely occupies the space of more than five or six; it may also be situated at distant parts, with intervals in which none is excited by pressure. 4. The intensity of the pain is equally variable. Sometimes it was so severe that the slightest touch of one of the spinous processes produced severe suffering; but sometimes violent pressure was required to detect it. Among those vertebræ that excited pain when pressed, the middle one was commonly the most sensitive; and in those above and below it, the tenderness gradually decreased. 5. The pain was more severe during the paroxysms than in the intermissions. When the severity of the fever diminished or the tendency to its returns grew less, the severity and the extent of the pain in the back also decreased; but the complete removal of the fever was not always accompanied by the entire loss of the pain, which often continued in a modified degree after the fever had ceased to return, and remained the longer the more severe it had previously been. 6. Complications of the intermittent fever did not appear to have any influence on the pain; it continued when the character of the fever was altered either for the better or for the worse, and it returned in cases of relapse.

From observing the constant resistance of this symptom, the author was induced to try what would be the effect of remedies that would tend to correct the local excitement that seemed to exist. He relates very briefly five cases, in which eight or ten leeches were applied over the spine in the situation where pressure gave the most pain. In four of these no other remedy was required; the pain ceased in a few days, and there was no recurrence of the febrile paroxysm.—*British and Foreign Med. Rev.*, July 1839, and Oct. 1840; and *Medicinische Zeitung*, 3d June, 1840.

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16. *On Softening of the Stomach in Infants.* By Dr. Iselin of Mulheim.—This disease was first accurately described by Dr. Jaeger, of Stuttgard, in 1811, in Hufeland's Journal. Since that period, various notices of it have been given to the public, particularly by Winter, Lenhossek, Chaussier, Laisné, Gairdner, and Wagner. It generally attacks children under one year of age, though it

is occasionally met with till they reach the age of puberty. It varies much in its duration, sometimes proving fatal within twenty-four hours, and at other times not for several weeks. It occurs both in the idiopathic and symptomatic form; the latter form being observed as a consequence or symptom of cerebral disease, acute eruptive disorders, or affections of the respiratory apparatus.

In the idiopathic form, the disease exhibits two distinct stages, 1st, of irritation, and 2d, of paralysis.

During the first stage, that of irritation, the child is observed to be restless and fretful for some days previous, when a smart febrile attack comes on, with quick pulse, dry hot skin, burning thirst, sleeplessness, violent vomiting, increased when any food is received into the stomach. These symptoms are rapidly followed by diarrhœa, the matters first passed being of a grayish colour and of considerable consistence, afterwards consisting of a yellowish acid serum. Writhing of the face is observed to precede the alvine evacuations, and they are also excited by pressure on the abdomen, which is usually much distended. There is great prostration of strength. The temperature of the abdomen, and particularly of the region of the stomach, is often much elevated, whilst the extremities are cold; partial sweats are observed, particularly about the head.

When the disease is more violent, it comes on very suddenly; the child faints frequently; the pulse is irregular and very quick; the eyes and features sink; the body is bathed with perspiration; convulsions at first slight, afterwards more severe, and strabismus are observed. The face assumes a blue colour; the diarrhœa and vomiting, which were first present, soon stop, or only one continues; the fits of fainting and convulsions become more frequent, and in one of these, the child expires.

Nearly the same symptoms are observed when this softening of the stomach is a secondary affection, only that then they are masked by the original disease, and are more apt to be overlooked, until they have gone on so far as to produce organic alteration of the structures of the stomach.

The above enumerated symptoms are not present in every case. The swelling and increased heat of the abdominal, but especially of the epigastric region, with the cold extremities, is perhaps, one of the most characteristic and constant symptoms. The swelling, once it has supervened, never disappears, and even after death, the form and position of the stomach may be recognized through the abdominal parietes.

The agonized expression of countenance peculiar to diseases of the abdominal region, as also the sunk appearance of the eye, are almost invariably present; even during the first stage of the disease, that of irritation; in the latter stage of the disease, they are peculiarly well marked.

The brain or its membranes were never observed by Dr. Iselin distinctly inflamed, but the blood vessels were often remarkably turgid. Cammerer, however, noticed various organic changes in the substance of the brain, and the *pons Varolii* and *medulla oblongata* very much firmer than usual. The lungs were usually turgid with blood, and in some parts exhibited traces of inflammatory action; and the same was noticed of the mucous membrane of the bronchi. In only one case was any thing approaching to softening of the tissues observed.

The abdominal cavity was distended by gaseous fluid, and the cellular tissue of its parietes emphysematous. The stomach was distended with air as well as the whole intestinal canal, and was often perforated in one or more points, or if not, was so much softened as to yield on the slightest touch. In the greater curvature of the stomach, especially at that part to which the spleen is attached, transparent discoloured spots were noticed, across which the fibres of the muscular coat could be distinctly seen; these melted away between the fingers, they were so much softened. This softening rarely extended beyond the lowest parts, though some observers have noticed it to extend to the whole stomach. Distinct traces of inflammation were occasionally observed surrounding these softened spots.

The softening appeared in every case to have extended from the internal to the external structures, and to have been caused by inflammatory action. In the same stomach the appearances were often presented in different points of mere softening of the mucous coats, softening of the mucous and submucous and fibrous coat, and complete softening or perforation of all the textures.

The spleen was very generally softened and discoloured on those parts which were in contact with the stomach. The diaphragm was rarely affected.

The intestinal canal usually presented inflamed and softened spots; and in one case the duodenum was found completely softened, almost diffluent, as well as many spots and patches over the small intestines.

Dr. Iselin attributes the disease to inflammation, and not to a chemical erosion, as was supposed by Hunter, Cammerer, Jæger, and others. The arguments in favour of the disease being owing to inflammatory action, are very strong, and at least prove that all the appearances could not be explained on the supposition of its being dependent on chemical erosion from the formation of an acid in the stomach. In a great number of the cases, and, above all, when the disease was raging as an epidemic at Gottingen, softening and perforation occurred simultaneously, both in the stomach, intestines, œsophagus, lungs, and mesentery. Such appearances could not have been presented, if they depended on the formation of an acid in the stomach, whether that acid was generated from the coats or the contents of the stomach or from the spleen. In fact, Dr. Iselin is inclined to think the disease may be cholera, modified by occurring in the infantile constitution.

The disease appears to be only curable in its first stage. When paralysis or convulsions once make their appearance, the case generally ends fatally. The strict antiphlogistic treatment is recommended: leeches to the abdomen and head. Vesications and sinapisms also were found efficacious, and after the bowels were cleared out by means of castor oil, other purgatives being found hurtful, slight astringents and bitters were administered. The disease was rarely stopped, in spite of all the remedies going on to its second stage and ending fatally.—*Edin. Med. and Surg. Journ.*, Oct. 1840, from *Archives Gén.*, June, 1840.

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17. *On the Epidemic Puerperal Fever of* 1838.—Two distinct forms of puerperal fever were met with by M. Voillemier; the first of an inflammatory, the second of a typhoid type.

The inflammatory form made its attack by a slight rigour, soon succeeded by intense pain in the hypogastric region, or in the *iliac fossa*, in general limited to one spot. General reaction soon succeeded, and the pulse, which during the rigour was depressed, rose to 130 beats in the minute or more. The skin became hot and covered with perspiration; the face became flushed; and the eyes lustrous. Frontal headach, often very intense, soon followed, and the breathing became hurried. This first period terminated by copious perspiration; occasionally, however, reaction did not commence till after the employment of copious depletion.

This form of puerperal fever in general yielded to the antiphlogistic regimen, though it occasionally terminated fatally; but it was by no means so intractable or fatal as the typhoid form.

The typhoid form of puerperal fever began with a long and severe rigour, which often came on a few hours after delivery. The pain in this form extended over the whole abdomen, and was often so intense that the weight of a cataplasm was insupportable. The abdomen became rapidly swollen; the pulse was feeble, undulating, very easily compressed, about 150 in the minute, often so quick as to be counted with difficulty. The respiration was hurried, and the anxiety extreme. There was intense frontal headach; the countenance was sunk; the face pale, and covered with a clammy sweat, which gave it the appearance of being varnished. Soon after this, constant purging and vomiting wore out the patient. The matters vomited were of a green colour, and the feculent discharges were very fetid. Death usually occurred at the end of a few days, sometimes of a few hours. The patients were generally sensible to the last.

In the inflammatory form the bowels were constipated, whilst diarrhœa prevailed in the typhoid type. In neither of the forms did the suppression or continuance of the flow of the lochial discharge, or that of the milk, appear to have any marked influence on the disease.

The morbid appearances were as follow. In 22 out of 24 cases purulent matter was found infiltrated in the sub-peritoneal cellular tissue, and in that of the pelvis. In two cases purulent inflammation of the lymphatic vessels, but of small extent, was met with. In three cases uterine phlebitis was noticed. The uterus itself was in most cases free from all marks of lesion. In a few cases small collections of purulent matter of the size of a pea were found scattered through its substance, but never an abscess of any size. These were in general nearer the external than the internal surface of that organ. Purulent infiltration was more frequently met with in the sub-peritoneal cellular tissue of the uterus, and that which occupies the pelvic cavity. This tissue, in fact, was in some cases so loaded with purulent matter, that when cut through it presented a greenish surface, and in many points abscesses of the size of a chestnut were met with. In six cases, the peritoneal coat appeared healthy. Various morbid appearances were observed on this membrane; its vessels were found injected, presenting various arborescent forms; its surface was found covered with a serous fluid, more or less transparent, but more generally puriform; purulent matter and false membranes were also often observed over its surface. In one case there was perforation of the stomach. In three cases abscesses in the muscular parts of the arm or leg were met with; in one case purulent matter was found in the elbow and wrist joints; and in six cases purulent deposits were noticed in the cavity of the pleura.

M. Voillemier could not distinctly trace these diseases to the direct action of cold or any peculiar atmospherical state. He, however, regarded as predisposing causes, close apartments, want of ventilation, an impure atmosphere, and elevated temperature; also insufficient or bad food, privations of all kinds, and neglect of the state of the body during pregnancy. He thought that in a few cases he could trace the propagation of the disease to contagion. Those who were delivered by means of instruments appeared to be more particularly subject to the disease. Of fourteen instrumental cases, six were attacked with this puerperal fever and four died.

M. Voillemier in conclusion, remarks, that "puerperal fever may be considered as a disease essentially general, of which the anatomical character consists in the existence of purulent matter in some part or other of the body."

As to the treatment, he places the greatest confidence in the antiphlogistic regimen; viz., the local and general abstraction of blood; cataplasms to the abdomen; injections when the lochia are fetid; and purgatives, especially in the inflammatory form. He thinks he has seen two instances of persons owing their lives to mercurial frictions. *Ibid.*, from *Journal des Connaissances, Méd. Chirurg.*, December, 1839.

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18. *Therapeutical Employment of the Oil of Ergot.*—Mr. Samuel Wright states that from a considerable number of trials made by himself and several of his medical friends, he is satisfied that the oil of ergot has the same therapeutic action as the crude drug.

"I have employed it," he remarks, "in nine different instances, where the exhibition of ergot was peculiarly indicated, and in all of them it answered most satisfactorily. In four of these cases, in which the contractions of the uterus were sluggish and imperfect, yet the *os uteri* sufficiently dilated, it produced very increased action in six minutes, and delivery speedily followed. In three similar cases, the same effect was produced within ten minutes succeeding the exhibition of the drug, and the termination was equally favourable. In another instance, where the pains had ceased without any evident cause, and the progress of labour was interrupted, it restored the contractions of the uterus in thirteen minutes, and within half an hour, an easy and a safe delivery was effected. In the ninth example, the pains were for the most part suspended, from sudden terror with which the patient was seized; the pulse had risen from 75 to 130 beats per minute, and an alarming irritability of the whole system was prevalent. The administration of the oil in this case reduced the pulse to 90 in less than ten minutes; the irritability in a great measure subsided, and during a state of calmness the uterine contractions were vigorously and steadily renewed, and within an hour from the time at which the dose was given, parturition was fully completed.

"Dr. J. Y. Simpson, Professor of Midwifery in the University of Edinburgh, very kindly tried the oil of ergot, and his opinion of its efficacy is thus expressed, in a communication with which I was recently favoured by him. 'I have repeatedly employed your preparation of the ergot, and have always preferred it of late, because it has appeared to me to act with more precision than the infusion of the powder, and its dose is more easily regulated. I have used it both in cases of lingering parturition, dependent on deficient uterine contraction, and also in instances of *post partum* hæmorrhage. In one case of the latter, where the uterus relaxed, again and again, after the repeated introduction of the hand into its cavity, I gave your preparation in a large dose, (60 drops and repeated,) and very shortly afterwards the uterus began to contract firmly, and the woman, who was much reduced by the floodings, complained of the severity of her after-pains.'

"M. Meisser of Paris, to whom I sent a quantity of the oil, observes respecting it:—'I am much pleased with your preparation of ergot. I think it superior both to the infusion and the tincture. It has all the advantages, without the inconveniences of the former. It is easily regulated, does not offend the stomach, and operates with quickness and certainty. Since receiving your kind communication on the subject, I have employed it constantly, and it has ever equalled my desires. I have also recommended its use to many obstetricians, and they have found it most serviceable.'

"Two other friends, Dr. Gordon and Mr. Wilkinson, surgeons, inform me, that, after repeated trials, they are 'satisfied the oil is much superior to any other preparation of ergot.' In their use of it, 'it has never produced sickness, nor offended the stomach in any way; its effects have been rapidly and certainly developed; nor has any injury or inconvenience followed its repeated employment.'

"I have seen oil of ergot administered in two cases of retained placenta; in each it produced energetic contractions of the uterus, and was speedy in promoting the expulsion of its contents. I have also witnessed its good effects in an instance of violent flooding which succeeded delivery. Here it had the happy effect of calming the irritability of the system, rendering the pulse softer and steadier, and inducing a full and complete uterine contraction, upon the absence of which the previous loss of blood had chiefly depended.

"Besides the cases already mentioned, I may state that I have twice administered oil of ergot in troublesome diarrhœa, and with marked advantage. The dose was 10 drops every three hours, and both the patients were cured on the following day. It must be understood, however, that this remedy acts simply by subduing any inordinate irritability of the intestines, for it is not physiologically an astringent.

"I have also repeatedly given it in cases of irritability and cramp of the stomach, and have never known it fail to relieve or remove the symptoms.

"The dose of the oil is from 20 to 50 drops. It may be given in any convenient fluid vehicle, such as cold water, warm tea, or weak spirit and water. The two latter I have found to be the most serviceable; for the result of some comparative trials, which I have made, has been, that the action of the oil is best secured by administering it in a dissolved or tolerably diffused form.

"As an officinal article, the oil of ergot possesses many advantages which are wanting to the crude drug. It is of easy preparation, and may be kept for any length of time. I have a specimen which has been prepared for four years, and on trying it the other day, I found its activity to be in no degree diminished. The rules to be observed in its preservation, are simply to keep it in a well-stopped bottle, and in a cool, dark place. An elevated temperature will volatilize it if there be any opening for it to escape, and if not, there is produced deep discoloration. The prolonged action of sun-light has a similar effect. In either case the strength of the oil is diminished.

"It is more easily and readily given than an infusion of the grain; it has a much less disagreeable taste, and operates with greater rapidity. It has also the very desirable advantage of rarely producing sickness. The nauseating effects of the common infusion are frequently complained of; and, not seldom, have they been a means of its popular condemnation. But the oil is in a great measure free from this objection. I have never known it to produce sickness or vomiting and similar has been the experience of my medical friends."—*Edin. Med. and Surg. Journ.*, July, 1840.

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19. *External Application of the Oil of Ergot.*—Mr. Wright has found this oil a valuable external application in cases of local rheumatism. He has tried it in three instances, and in all of them it has proved curative. The affected part should be well rubbed with it for a quarter of an hour, night and morning, until relief be obtained It is one of the best remedies with which he is acquainted for the cure of toothache. He has repeatedly known it subdue the pain when kreasote has failed. But perhaps its greatet value, as an external application, is in the arresting of hæmorrhage. He has often wounded small arteries in dogs and rabbits, and subdued the bleeding completely with a drop of this oil. Hæmorrhage from the jugular and femoral veins has been similarly arrested. The troublesome bleeding which sometimes follows the extraction of a tooth, and leech-bites, it is equally efficient in stopping.

In a severe case of epistaxis, he arrested the hæmorrhage, by injecting up the nostrils equal parts of very dilute spirit and oil of ergot; and he has little doubt that in the severe cases of flooding which succeed delivery, the injection of this oil diffused through water into the uterus, would be productive of the happiest results.—*Ibid.*

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20. *Solution of Bi-chloride of Mercury in Itching.*—Dr. Prus states, that he has often succeeded in the treatment of prurigo, an affection often obstinate, in the old men under his care in Bicètre, by means of lotions night and morning, over all the parts where the pruriginous papules exist, with a solution of bichloride of mercury, one drachm in half a pint of water.

Mr. Duparque employs with benefit the same solution in the pruritus of the internal surface of the labia pudendi, which occurs in some females in the decline of life, and which is often intolerable and difficult of removal.—*Journ. de Connaiss. Méd.*, May, 1840.

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21. *Experiments on the Mechanism of Inflammation.*—Dr. Robert Latour, details in the *Revue Médicale*, for January, 1840, a number of experiments which seem to demonstrate, that cold-blooded animals are not susceptible of the inflammatory process; and that, consequently, the experiments of Wilson Philip, Thomson, Hastings, Kaltenbrunner, Gendrin, and others, made on these animals, with the view of demonstrating the nature of the inflammatory process, go for nothing. M. Latour has in vain endeavoured to excite inflammatory action in carps and frogs, by applying various irritant substances to the skin, to the abdominal cavity, and to the other tissues of the body; and eighteen experiments are given in detail in proof of his statement. The following is a short abstract of the results:—

Deep incisions were made through the skin and muscular fibre of carps and frogs, and the wounds afterwards stimulated by the application of various acrid agents; as ammonia, concentrated acids, &c., which, though they caused great pain, were not followed by any reaction, either local or general. A peg of wood remained three days in the muscular fibres of a carp; pins were left several days transfixing the limbs of frogs; a piece of wood was left for thirty-six hours in contact with the mesentery of a frog; a piece of potato was for a much longer time within the abdominal cavity of another; and a seton was kept in the thigh of the same animal for more than a month; the skin of a carp was cauterised with sulphuric acid; a red-hot iron was applied to the thigh of a frog; and yet in not one of these numerous and oft-repeated experiments, could the least appearance of inflammatory action be traced to the irritated wound; there was neither redness, swelling, sanguineous injection, nor suppuration. Nay, more, in those experiments where the muscular fibre of the animal was exposed, the redness which came on immediately after the incision was made, disappeared, and the wound filled with a glutinous matter, which served as the basis of the cicatrix. These animals were not, however, insensible to pain, as they showed by their writhings how much they suffered from the operations.

These results being in direct opposition to those arrived at by other experimentalists, M. Latour endeavoured to find out the cause of the difference. As it was chiefly on the frog that former physiologists had experimented, and it was from the phenomena observed in it that they announced they had developed inflammatory action, he repeated their experiments, and succeeded in producing a sanguineous injection, very visible to the naked eye, on the upper and inner surface of the thigh of a frog, by pinching it with a pair of forceps previously dipped in ammonia. He remarked, however, that these parts became covered with a tolerably abundant viscous sanguipolent secretion, and that the animal was seized with convulsions, and expired. M. Latour then discovered that the blood had been coagulated by the action of the ammonia, after having parted with its fluid parts, in precisely the same manner as happens to the blood of the frog when acted on by ammonia out of the body; as soon as the two liquids come in contact they lose their fluidity, and become a homogeneous blackish mass, of a plastic nature, and not easily broken up.

M. Latour inferred from this, that the redness caused by the ammonia was not of an inflammatory nature, but that it was the effect of the decomposition of the blood, which, being deprived of its fluid portions by its affinity for the alkali, was consequently stopped in its circulation by its coagulating within the vessels.

When a frog was plunged in salt water the skin was reddened, and the animal killed. In this case the blood was also decomposed, became more fluid, and the colouring matter was precipitated, and it is to this circumstance that M. Latour attributes the increased redness of the skin. The same peculiar colour was produced by mixing the blood of the frog with a solution of sea-salt.

Similar results followed the application of a red-hot iron to the webbed foot of the frog when placed in the focus of a microscope. As the red-hot iron was brought nearer and nearer to the web, the blood became coagulated first in the smaller vessels and afterwards in those of a greater volume.

These facts throw doubts on all the conclusions which have been drawn from the observations of experimentalists, on the excited vascular actions of the cold-blooded animals. M. Latour is inclined to the belief, that inflammatory action can only exist in those classes of animals where the temperature of the body is constantly in an exalted condition,—in fact, in the warm-blooded animals alone. Many of his opinions are too fanciful, and rest on too insufficient data to be further noticed.—*Edinburgh Med. and Surg. Journ.*, July, 1840.

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22. *On the Causes of Scrofulous Diseases.*—M. Lugol proposed to himself the question whether scrofulous diseases ought to be regarded as the result of accidental external causes, or that of a hereditary predisposition? And the conclusions to which he has arrived are the following:—

The accidental causes do not necessarily produce scrofula, at least it is very doubtful whether they are alone sufficient to produce the disease. The production of scrofulous diseases, however, by hereditary descent, is the most common and the most clearly proved, and which we are enabled to trace in the great majority of instances.

The appearance of scrofula in one child is a sure sign of the whole of the rest of the family inheriting the scrofulous constitution, by virtue of which all the other children have the same original predisposition to the disease. If the families which betray the marks of inheriting a scrofulous constitution are observed with care, it cannot fail to be remarked that they are subject to a great mortality. Scarcely a fourth of the children who are born attain the age of puberty, and it is by no means a rare occurrence to find that families, originally very numerous, have been all cut off even before they reached this period of life. Scrofulous disease, in fact, is one of the most active causes of mortality of the human race; there is no other disease which cuts off so many or so young victims.

In his memoir, M. Lugol endeavours to show that parents who are at present apparently free from scrofulous affections, and yet beget scrofulous children, can, in almost every instance, be traced to have had brothers or sisters who have been affected with scrofulous diseases, or have themselves been the subjects of some scrofulous affection in early childhood. There have also been seen instances of scrofula appearing in the parents, after having had born to them scrofulous children. He consequently arrives at the conclusion, that hereditary diseases do not pass over a generation, as has been generally supposed.—*Ibid.* from *Comptes Rendus*, January 20, 1840.

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23. *Cayenne Pepper in Sea Sickness.*—A small teaspoonful of cayenne pepper, mixed in a warmed fluid, sweetened, and taken as soon as the sensation of sea sickness occurs, is said, in a communication in the *Lancet*, (August 8th, 1840,) to have immediately relieved the complaint in 18 passengers on board the New York packet ship Quebec. It may be worth a trial, though we fear, like the many other remedies which have been proposed, for the relief of this distressing affection, it will not always succeed.

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24. *On the Influence of Splenic Engorgements on Agues.*—It is quite unnecessary to do more than simply allude to the very great frequency of congestion and enlargement of the spleen after attacks of intermittent fever. The important question is, what is the effect of such a state on the health of the patient? and how is it best remedied?

M. *Bally* was the first to show distinctly that the marked tendency to the relapse of intermittent fevers, after they have been seemingly got rid of, is mainly attributable to the engorgement of the spleen which is permitted to remain. The fever may have quite ceased to return for one or even several months, but the patient, notwithstanding, does not recover his former health and strength; his complexion remains pale, his appetite is variable, his digestion is not good, and his muscular energy remains feeble; and at length the periodical feverish symptoms begin again to make their appearance.

In a recent lecture at the Hôpital de la Charité, M. *Nonat* has inculcated the opinions of his predecessor with much ability.

"We will not affirm," says he, "that hypertrophy of the spleen produces intermittent fever; this has its *point de depart* in some unknown cause, whether of the nature of miasm or otherwise, and inappreciable in its nature; but certainly it cannot be denied that such hypertrophy is an occasional and predisposing cause, which keeps the system under the influence of this primitive agent."

By far the most potent agent in subduing this enlarged state of the spleen is the Peruvian bark. But this must be given in larger doses than is usually done. It is more than probable that the frequency of the relapse of agues is mainly attributable to the insufficient administration of this most valuable specific. Such was the opinion of *Morton*, *Sydenham* and *Torti*; and the experience of the best practitioners in the present day confirms its truth.

M. *Nonat* remarks: "M. *Bally* was the first in France who distinctly pointed out the efficacy of quinine in the treatment of intermittent fevers, and more especially in those cases which are accompanied with considerable engorgement of the spleen. According to this experienced practitioner, we should commence with eight or ten grains of the salt every eight hours, and raise the dose quickly, if the case be obstinate, to 40 or even 60 grains in the course of the day. I have seen M. *Bally* obtain, by this method, a success which it is vain to expect from the same remedy when administered in the usual manner."

M. *Piorry* assures us that under the use of large doses of quinine—from 40 to 80 grains in the course of twenty-four hours—he has seen considerable engorgements of the spleen subside in a few days.*

M. *Nonat* has investigated this subject of practical medicine with much zeal: and the conclusion at which he has arrived is, that the quantity of quinine required to effect a permanent cure of an ague, and of the induced enlargement of the spleen, is almost always in a direct ratio with the amount or extent of this enlargement. "After a great many experiments," he says, "I have satisfied myself that the dose of quinine should vary from 12 to 40 or 50 grains in the course of twenty-four hours, and that it must be proportioned to the increase in the size of the spleen; such are the doses which we have been in the habit, for the last three years, of using with such marked success. Hitherto we have met with very few cases indeed of enlargement of the spleen, which have resisted this method of employing the quinine."

The length of time, during which it may be necessary to continue the use of the remedy, varies much according to several circumstances, such as the extent of the enlargement, the duration of the complaint, the constitution of the patient, and so forth. But, whatever be the case, its employment should not be discontinued until the viscus has resumed its normal dimensions. In some cases, the stomach will not bear the large doses that are required; we must then administer the quinine in enemata, and in still greater quantities. To derive success from this mode of treatment, it is quite necessary that the enemata be retained; else all the febrifuge effects of the quinine will not be obtained. "When this condition is fulfilled," says M. Nonat, "I have in every case observed that the fever ceased, and the engorgement of the spleen subsided, as quickly as when the quinine had been administered by the mouth; and this too in patients affected with most obstinate agues which had resisted the ordinary plan of treatment in various hospitals."

M. *Nonat* does not expect much from the endermic use of quinine, as recommended by some physicians, the fever may indeed be cured, but not the splenic disease in this way. He has tried in a few instances the *iatroleptic* method, or that of rubbing the quinine in, in the form of an ointment. Forty or fifty grains of the salt were mixed with two ounces of lard, and the patient was directed to rub in some of this ointment on the groins and armpits three times a day. Under this mode of treatment, the fever has been known to cease, and the splenic enlargement to subside a little; but never to any considerable extent, or permanently.

Before closing these remarks, we should mention that, in most cases of ague attended with enlargement of the spleen, the local abstraction of blood, by cupping or leeches, from the left hypochondrium will greatly promote the efficacy of the quinine.—*Med. Chirurg. Rev.*, July, 1840; from *La Lançette Française.*

25. *Tincture of the Muriate of Iron in Diabetes Mellitus.*—Charles Clay, Esq., of Manchester, records in the *Lancet*, (October 10th, 1840,) three cases of diabetes mellitus, successfully treated with the Tinct. ferri muriat. in large doses. The following is the formula employed: ℞. Tinct. opii. ʒiss; Tinct. ferri muriat. ʒii: Quinin. Sulphat. gr. viij: Aq. distil. ℥vj. M. An ounce of this was given three times a day. A strict diet of animal food was adhered to.

26. *On the Sweating Regimen of Dr. Priessnitz at Graefenberg.*—For some years past a Dr. Priessnitz has acquired a great reputation over Germany for the success which has attended his practice for the cure of chronic diseases, and which has made his residence at Graefenberg visited by invalids from all parts

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* Dr. *Elliotson*, in some of his clinical lectures reported in the Lancet five or six years ago, very forcibly inculcated the same views as to the treatment of the enlargements of the spleen, which so frequently follow intermittent fevers."—*Rev.*

of the continent. Dr. Bigel, Knight of the Legion of Honour, and one of the medical professors in the Imperial College at Petersburgh, has recently published an account of this regimen, under the title, "Manuel d'Hydrosudotherapie, ou Traitement des Maladies par l'eau froide, la sueur, l'exercice, et le regime." He seems to be an ardent admirer of the sweating regimen as pursued at Graefenberg, and, as he has derived personal benefit himself from its adoption, we may attach the more credit to his statements. Dr. Priessnitz is evidently a disciple of the old humoral school of pathology—and we believe that in this respect he is far from being alone either among his own countrymen, or his professional brethren in England and France—for he considers almost all diseases to arise from the existence of some morbid or peccant humours generated in, or introduced from without into, the blood; and his practice, founded upon this idea, essentially consists in using means to effect the expulsion of these humours from the system, and to replace them with healthy juices. These means are *water*, *air*, *exercise*, and *diet*.

The causes which, in his opinion, most frequently engender the unhealthy humours of the body, are the use of improper food, or the excess of what is wholesome, for the suppression of perspiration, the want of due exercise, the influence of various mental emotions, especially such as are of a depressing nature, the inhalation of a noxious atmosphere, the neglect of cleanliness, the use of stimulating liquors, &c.

His remarks especially on the neglect, as well by physicians as by unprofessional people, of the use of baths and other means to regulate the state of the cutaneous functions, are exceedingly pertinent: "We every day," says he, "see whole families purged and vomited by the order of their physicians, but rarely or never do we hear of their being recommended to wash their skins."

No one can find fault with Dr. Priessnitz's practice in this respect; in it there is certainly no want of washing both inside and outside man's "muddy vesture of decay."

"Ablutions," says he, "with cold water, are doubtless highly useful in promoting the cutaneous exhalation, a function so necessary for the preservation of health; and the drinking of cold water contributes not less powerfully to the same end, by preventing the *stasis* of the juices and impressing upon them a regular circulation. Again, it is no less important to expose as frequently and as freely as possible the body to the fresh air, since it is from this element that we derive the very principle of life, the oxygen. Just in proportion as there is less air, so there is less oxygen, and consequently the less of the principle of life is present." He insists very particularly upon the utility of drinking very largely of pure cold water. Copious libations of this element constitute a most important part of his regimen. In reference to other beverages, he says:—

"It is a great mistake to suppose that the use of pure cold water can be compensated by the drinking of tea, coffee, or thin beer, as is too commonly imagined; for it is not only as a diluent, and dissolvent of acrid matters in the bowels and kidneys, and as an attenuant of unwholesome juices in the blood, but also as a powerful means of communicating oxygen to the system, that pure water, taken in large quantities, acts so beneficially. In short, let any one try the effects upon him or herself of drinking freely and largely of the fair element, and he will not fail speedily to acknowledge that his health has been much improved."

M. Priessnitz is by no means a *starving doctor;* a fundamental principle of his treatment being to maintain the system in a state of vigorous strength. But then he is somewhat of an exclusive. He interdicts all spiced and highly-seasoned dishes, all hot peppers and other foreign spices, which may suit the natives of the countries where these grow, but which are not required in our climates, where the air, by being more highly charged with oxygen, is more stimulating. He permits the free use of our own vegetable productions, such as our various culinary herbs and salads, including radishes, mustard and such like stimulants, provided the patient is free from gout and cutaneous diseases.

Cold meats he prefers to hot, especially for persons with weak stomachs.

For breakfast and supper by far the best articles of food are bread, milk, and butter.

He does not restrict his patients as to the quantity of the food they take; Nature, he thinks, will seldom err, in this respect, provided the appetite is not provoked by condiments or stimulating liquors, and the person takes sufficient exercise.

The grand principle of his treatment consists in supplying the system with the means of deriving healthy juices from the food that is taken, while, on the one hand, all the poisonous and peccant humours are evacuated by regular copious sweating effected in the manner which we are about to describe, and, on the other, the system is fortified by the use of cold bathing, used while the sweating continues.

Our readers will observe that his practice in this respect is entirely analogous to that of the Russians, who, it is well known, are in the habit, upon leaving their vapour baths, of immediately, and while the body is drenched with perspiration, rolling themselves in the snow.* Dr. Priessnitz has probably derived the hint from this custom of his neighbours.

The following is his plan of a *sweating bath:*

The person, stripped naked, is inclosed in a long blanket, which is then to be wrapped close round his head, body and limbs, (the arms are to be kept applied to the sides, or folded across the chest,) leaving no part exposed but his face. The ends of the blanket are to be tucked up, as nurses do with the clothes of an infant, and the whole is then to be secured with bands put round various parts and tied.

The patient thus hermetically cased in his blanket, is to remain quite quiet—he may fall asleep if he chooses—until the skin begins to sweat freely. This seldom happens before the expiration of one hour, and frequently for not a much longer time.

By endeavouring to move his limbs up and down, and by rubbing his body with his hands as well as he can in his mummy-like wrapping, the tendency to sweating will be increased.

As soon as this commences, the window of his chamber is opened, and he is to drink, every quarter or every half hour, a glassful of cold water. This increases the perspiration so much that it often not only oozes through the blanket, but drips down on the floor. Sometimes not less than seven pounds may be collected in a vessel placed below the bed. The sweating is to be kept up for at least an hour; in certain cases for two, three, or even four hours. Some patients are subjected to this process twice in the twenty-four hours, at four o'clock in the morning, and again an hour or so after dinner.

When the sweating has been continued sufficiently long, the patient is then unswathed, and, covering himself with a cloak, he hurries to the bath, where, after first wetting his head and chest with the water, he plunges into the cold water, his body still streaming with perspiration. While in the bath, he should move about his limbs and exercise every part as briskly as possible, in order to promote a reaction in the cutaneous vessels.

Now this quick transition, from a state of profuse perspiration to the use of a cold bath, is not attended with any danger, such as is often the case if the body has been perspiring freely from violent exercise, or from the use of stimulating sudorifics. The important feature of M. Priessnitz's plan is, that the organs of circulation and respiration are not at all quickened or excited; they remain quite tranquil. Hence there is no sudden check given to these vital functions, and the body, instead of being chilled by the sudden transition, is invigorated and glows with warmth over its entire surface.

The greater that the cutaneous reaction from the use of the bath is in any case, the more favourable is the prognosis, and the more speedy will the cure of the existing disease be.

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* The same impunity is observed in the eating of ices in tropical countries, when the body is perspiring freely, provided always the breathing is not quickened at the time, and gentle exercise is taken immediately afterwards.—*Rev.*

When the patient is unswathed to go to the bath, all that is necessary is only to drink a glass of water as often as he may feel himself much heated. For the same reason it is not requisite to wet the head and chest before plunging into the bath, except when this (the bath) is situated at some little distance, and when the outward air may possibly have somewhat closed the open pores of the skin. Let no one be sceptical of the truth of these statements.

Any one, who has visited the patients at Graefenberg, will be at once satisfied that there is not the least danger in plunging into a cold bath while the whole surface is sweating most profusely, *provided the breathing is not hurried at the time.*

If attention be paid to this one caution, there is little or no risk of any injurious consequences from the immediate transition from a state of profuse perspiration to immersion in cold water. But if the surface is permitted to be at all chilled, and the perspiration is in any degree checked by unnecessary delay, before the immersion takes place, a portion of the internal heat of the system, which is requisite for its due reaction, is lost, and then unpleasant consequences are often observed to ensue.

We again repeat that if these two precautions—viz: the preventing a quickened state of the breathing, and a chilled state of the skin—were more uniformly attended to, we should hear of fewer accidents from bathing when the body was heated or perspiring freely.

On leaving the bath, the body is to be well rubbed; and the person then dresses himself and takes a walk for half an hour or upwards, to keep up a uniform glow over the whole system. During this promenade, it is useful to drink a tumblerful or two of cold water.

In many cases the cold douche baths are used at Graefenberg with astonishing success, especially against chronic gouty, and rheumatic ailments. The patients always walk to them, for they are all situated at a considerable distance from the dwellings, exercise after their use being strongly recommended: during this exercise cold water is to be freely drunk.

There are various other ways in which cold ablutions are recommended by Dr. Priessnitz, such as the hip and foot bath, washing the head with cold water, and injections of it into the bowels. In short, cold water is the sole and only remedy that is used in almost every case. No other application is ever applied to any abscesses or outward sores, than linen dipped in cold water, and then covered with oil-silk or other means to prevent the evaporation.

The sweating regimen at Graefenberg induces, in very many cases, an eruption of boils on various parts of the body, these, when troublesome, are always treated with fomentations of cold water. Ointments are never used.

From the preceding remarks, our readers will see that the sweating regimen of Dr. Priessnitz is any thing but a feeble and ineffective practice. If there are peccant humours in the body when sick—and who will deny their presence?—and if these humours can be expelled by perspiration, then there is no *methodus medendi* comparable to the one which we have described as pursued at Graefenberg. The profuse sweating, induced in the manner which we have mentioned, is in every respect much preferable to what may be excited by severe bodily exercise, or by the internal use of any sudorific remedies. Then, too, the bold practice of immersing the patients while in a state of profuse perspiration into cold water must, if no evil consequences ensue from the sudden transition, most powerfully invigorate and harden the system.

Let it be remembered that copious libations of the pure element at the same time form a necessary part of the treatment. Dr. P. says that no patient should drink less than at least twelve tumblerfuls during the course of the day: some take as many as twenty-five or even thirty. In some obstinate cases, this practice has been continued for upwards of twelve months, and ultimately with complete success.

Exercise, also, is a necessary part of the regimen, as the vigour of the circulation cannot be kept up without it.

In conclusion, we shall briefly describe the regimen of a day at Graefenberg, as pursued by Dr. Bigel and other patients, under the direction of Dr. Priessnitz.

At four o'clock in the morning, a servant comes to roll you up in blankets. In summer you will probably commence to sweat in from half an hour to an hour. After having sweated for about a couple of hours you go to the bath. On coming from the bath, you walk about, and drink occasionally a glassful or two of cold water, until the breakfast hour arrives. When this is over, you again walk about and drink more water. About eleven o'clock you go the *douche* bath, and return at about noon, the hour of dinner. After this repast, the parties usually form themselves into different groupes either in the pleasure-grounds or elsewhere. About four o'clock is taken the last promenade, which may be called the sudorific one, as it consists in walking briskly up and down a hill, so as to encourage a very free perspiration. A cold bath is again taken; then a little exercise after the bath, and at eight o'clock supper is ready. A ball, a concert, or other promenade in the grounds closes the evening. Before retiring to bed, a hip bath is used, the wetted compresses are placed on his bed, and the person then lays himself down to sleep.

For the first week or ten days, the patients are not subjected to so severe a regimen as afterwards, when their constitutions have been in some degree prepared, and are already considerably fortified. The sweating, for example, is not continued at first for more than an hour, and they do not remain above from five to fifteen minutes in the cold or in the douche bath.

Even with these precautions the regimen is in most cases found to be very exciting, and to induce a considerable febrile reaction in the system, and not unfrequently also diarrhœa, vomiting, and the development of abscesses, boils, and other forms of cutaneous eruption. The number of boils that make their appearance is sometimes surprising; from fifty to a hundred have been counted in one patient. They are considered as so many issues for the discharge of the morbid humours of the system through the cutaneous exhalants.

When the number or size of these abscesses is great, an abatement of the bathing regimen is generally necessary: the douche and the plunge baths are to be used for a shorter time, as these are powerful agents in promoting the derivation of the humours in the system towards the surface; but the sweating part of the regimen is continued as before, because thereby a portion of the vitiated humours, which would otherwise be discharged by the abscesses, is got rid of by the exhalants of the skin.—*Med. Chirurg. Rev.* Oct. 1840.

27. *Cure for Corns.*—JAMES HENDERSON, Esq., states that he has found the following to be a never failing remedy for corns: ℞—Tinct. iodine ℥ss; Iodur. Ferri gr. xij; Chlorid. antimon. ℥ss.—M. To be applied by means of a camel hair pencil, after the corn has been well paired. He has generally, he says, found three applications sufficient.—*Lancet*, April 18, 1840.

28. *Chilblains.*—The diluted tincture of iodine is said to be a very good application to this troublesome malady.—*Med. Chirurg. Rev.* July, 1840.

29. *Treatment of local Paralysis by Phosphorus.*—Several German writers very strongly recommend the use, internally as well as externally, of phosphorus in cases of paralysis of the optic and auditory nerves.

In a case related by M. DEZEIMERIS in his late elaborate memoir on diseases and injuries of the frontal sinuses, where deafness and blindness on the left side supervened upon a severe injury of the head, he resorted to this treatment with success.

He prescribed as follows:

℞. Phosphori gr. j, solve in
Olei animalis æther ʒj,
Olei caryophyll. ℈j.

Dose.—Three drops, to be gradually increased to 20, to be taken on a piece of sugar night and morning. And

℞. Phosphori gr. ij,
Olei animalis æther ℨj,
Olei cajeputi ℨss. Solve.

The eyelids to be well rubbed with this embrocation three or four times daily.

A blister also was applied upon the mastoid process and kept open.

In four weeks the patient had quite recovered his hearing and sight.—*Med. Chirurg. Rev.* Oct. 1840, from *L'Experience.*

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30. *On the circumstances which govern local Inflammatory Action, the effusion of coagulable Lymph, and the formation of Pus as a sequela of disease, accidents, operations, &c.*—Dr. Perry read a paper on this subject, in which he pointed out the phenomena of inflammation, its dependence on nervous energy, and the various opinions held by pathologists on the effusion of coagulable lymph, pus, &c.; he dissented, to a certain degree, from the opinions of Hunter, who deemed pus a *secretion* from the blood: as also from the theory of Gendrin, Carswell, and others, who hold that pus is formed from the fibrine of the blood itself, in consequence of its stagnation: neither of these opinions was considered by the author as satisfactorily explaining the phenomena. The generally admitted fact, that in those weak and strumous, and in those weakened by long confinement in an hospital, severe accidents, operations, difficult parturition, &c., inflammation was more easily set up in the system than in the strong, he considered a point of great importance, as explaining the source of local inflammatory action. It was observed by Dupuytren that of those who died in the Hôtel Dieu, after operations, the majority perished in consequence of inflammation of some internal organ, or of many organs at the same time. This accorded with the experience of the author, as inflammation, purulent depositions, &c., most frequently occurred after adynamic fevers, particularly when the brain and nervous system had suffered severely; as also after other contagious exanthematous fevers (none of which the author considered as inflammatory in the first instance). Tables were exhibited, which showed the result of 155 fatal cases, after fever, from which it appeared that local inflammation, with deposits of pus, &c., occurred in internal organs in a large proportion; and these results, so often fatal, the author stated to be the consequence of a change produced upon the blood and capillary vessels, by the previous shock or over excitement and innervation, and that the rapidity with which those products were formed might be taken as a test of the extent to which such changes in the blood and innervation existed; to remove such state by restoring the equilibrium of the system was the province of the physician.—*Report of Proceedings of the British Association for the advancement of Science. Athenæum.*

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31. *Pertussis.*—Dr. Hanny stated to the medical section of the British Association for the advancement of Science, that he had frequently found rubbing the chest with cold water, repeated two or three times in the day, with so much activity as to produce a rubefacient effect, of great efficacy in pertussis. This remedy might even be resorted to successfully, he added, where bronchitis existed.—*Ibid.*

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32. *Recurrence of the Menstrual Discharge at an advanced age.*—Dr. Peterson has recorded, in the *Bibliothek for Læger*, February, 1840, the case of a healthy woman 79 years of age, who was seized with uterine pains which lasted a few days, and terminated by a hæmorrhaghic discharge. The following month she was affected in a similar manner, and she has since, a period of twelve months, regularly menstruated.

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33. *Three Cases of Acute Inflammation of the Aorta.* By Dr. Thierfelder.—1, A mason, 35 years of age, complained for some days of palpitations, oppression, and sensation of burning heat in his breast, and a dry troublesome cough; and awoke on the 5th of November with great increase of all the uneasy symptoms.

On the arrival of Dr. Thierfelder, half an hour afterwards, he was found insensible, with stertorous very slow breathing, and cold extremities. In a short while he came to himself, and uttered a few unintelligible words. His body was swollen, of a bluish hue, and covered with a cold sweat; his pulse was very weak and soft; the action of the heart scarcely perceptible; and the respiration so slow that he scarcely breathed five times in two minutes. Fits of suffocation returned at intervals, and he died about three hours after being seen.

The lungs were found adhering to the pleura at some points, but were otherwise healthy, and no fluid was met with in the cavity of the pleura. The pericardium contained nearly fifteen ounces of serous fluid. The heart was filled with blood, the right auricle enlarged, but the ventricles appeared healthy. The *vena cava* and pulmonary veins were much distended with venous blood, but no morbid alterations were observed on them.

The ascending aorta presented the marks of violent inflammatory action on its inner coat; it was highly reddened and injected, and this appearance extended to its numerous ramifications; while numerous patches of plastic lymph adhered strongly to its surface.

The other organs were healthy.

2. An unmarried woman, 23 years of age, was seized on the 20th August, 1830, with a violent rigor, caused by a fright, followed by anxiety, oppression, and sensation of burning heat in the chest, violent cough, and bloody coloured expectoration, and considerable fever. Two days after this, palpitations of the heart, and fits of suffocation, with a constant dry cough, were complained of. It was then she was seen by Dr. Thierfelder. She had great anxiety, and was constantly groaning, and complained of a burning sensation and feeling of oppression at the upper part of the sternum, stretching towards the left clavicle, the neck, and the back. The respiration was hurried, and from time to time violent attacks of coughing came on, with fits of suffocation. The face was red and somewhat swollen, and the pulse was 160 in the minute, hard, but very small. She died on the night of the 22d.

The lungs were found healthy, only containing in their bronchial tubes a quantity of reddish frothy mucous. The pericardium contained nearly a pound of serous fluid. The heart was distended with black blood, but especially the right side, which was also paler and softer than usual. The left side, both auricle and ventricle, was firm, and appeared somewhat thickened. The internal membrane of the left ventricle of the heart, as well as that of the aorta, from its origin till opposite the third dorsal vertebra, as well as that of the coronary arteries, was reddened in consequence of inflammatory action. The internal membrane was considerably swollen in the aorta, so much so, that about a third of the diameter of the vessels was lost, and its surface was covered with an effusion of plastic adherent lymph.

The other organs of the body appeared to be healthy.

3. A clerk, 28 years of age, on the 24th of January, after washing himself with cold water, and sitting writing for several hours in a cold apartment, became chilled. He passed a restless night, and complained of rheumatic pains in his left arm and head. Next morning fits of suffocation came on, with a sensation of oppression and heat, together with a painful pulsating feeling at the upper part of the sternum, and of the left clavicle, stretching through to the back. The pulse was very quick, hard, and tense; the respiration was rapid; and he had troublesome fits of coughing. The abdomen was swelled, and painful to the touch; his tongue was dry, and he had considerable thirst.

Towards evening he got worse; the fits of suffocation were more severe; his body was swollen; his eyes injected and nearly insensible to the approach of light; his respiration very laborious; and his thirst almost unquenchable. He had also delirium. In addition to these symptoms, on the evening of the 26th he had ringing in his ears, which was much increased during the fits of coughing.

On the morning of the 27th these symptoms begin to abate. The oppressive sensation of heat and palpitation still remained; the pulse was still 170 in the minute, hard and tense. Towards midnight, however, a copious warm perspiration, as well as a red miliary eruption, broke out over the body, and from that period he gradually recovered.

Acute inflammation of the aorta is always a disease difficult to distinguish. Dr. Thierfelder considers the peculiar cough which attends sufficient in most cases to declare the nature of the malady. He always found it very frequent and very hard.—*Edinburgh Med. & Surg. Journ.*, Oct. 1840; from *Ammon's Monatschrift*, April, 1840.

34. *Hypertrophy of Columnæ Carneæ.*—Mr. Adams found, on making an incision into the cavities of the heart of a man, who had been subject to violent paroxysms of dyspnœa and palpitation, in one of which he expired, the left ventricle almost entirely filled by the enlarged columnæ carneæ, two of which were particularly enlarged, as well as the *chordæ tendineæ* of the mitral valve.—*Dublin Journ. Med. Sci.*, July, 1840.

35. *Hooping Cough more than once in the same Individual.*—Dr. Wm. England states that he has now under his care a boy five years of age labouring under hooping cough, who had the same disease when about a year old. It is also said that a maternal aunt and uncle of this child also were twice affected with pertussis, first when infants but a few months old, and the aunt a second time when seven years of age, and the uncle a second time when forty-five years of age.—*Lond. Med. Gaz.* May, 1840.

36. *Strychnine in Neuralgia.*—Mr. Pidduck has employed strychnia in six cases of neuralgia, with so much advantage as to entitle the remedy to further trials. No benefit is of course to be expected from it, in cases of the disease where there is any mechanical cause of irritation affecting the nerve at its origin or along its course.—*Lond. Med. Gaz.* Aug. 1840.

SURGICAL PATHOLOGY AND THERAPEUTICS AND OPERATIVE SURGERY.

37. *Congenital Dislocation of the Humerus reduced after sixteen years.*—By M. Gaillard, Surgeon to the Hôtel Dieu, of Poictiers. The following is an abstract of a report to the Royal Academy of Medicine, drawn up by MM. Cannet and Bouvier. They consider the case as very curious, and without a parallel in the history of surgery.

Mademoiselle L. B. a few days after birth presented a deformity of the left superior extremity with much pain during its movements. The elbow was thrown from the body, the forearm semiflexed, and the hand in a state of pronation. During her infancy she could not bring the elbow near the trunk, nor raise her hand higher than the chin. The limb was often painful during her early years; but latterly the pain had only come on when the limb had been long fixed in one position. When M. Gaillard saw her in 1836 she was sixteen years of age. He found in the posterior part of the shoulder a projection formed by the head of the humerus, which was placed in the subspinous fossa of the scapula, above the middle part of the spine, which was curved by the pressure it had undergone. On moving the arm, the head of the bone was felt rolling under the fingers, and it appeared abraded from rubbing on an irregular surface. The hand could not be brought to a state of supination. The forearm could not be extended on account of the permanent contraction of the biceps. Elevation and rotation of the arm were impossible.

On the 5th of January, 1837, the patient was placed on a stool, a cushion was applied to the external border of the scapula, and maintained by two cords passing from its extremities and attached to two fixed rings. The arm directed horizontally inwards was then submitted to the action of a weight of sixteen pounds. The weight was suspended at the end of a cord which passed through a fixed pulley, and was attached to a bracelet fixed above the elbow. Time after time M. Gaillard increased the power of the traction, occasionally adding his efforts to the force exercised by the weights. The extension prolonged from twenty to twenty-five minutes was repeated on the 10th and 11th of January, each time bringing the head of the humerus nearer the glenoid cavity, and with no other inconvenience than a slight pain and swelling of the arm. On the 13th the head of the humerus was more moveable. Further traction was employed, the arm being always placed horizontally. The humerus yielded, glided over the scapula for the space of an inch and a half, and approached the glenoid cavity. M. Gaillard then seized the elbow, and by carrying it backwards and upwards he directed the head of the humerus downwards and forwards, then lowering the limb he felt the head pass under the acromial arch, and leap over a projection which appeared to belong to the articular cavity. The arm was now in contact with the trunk, it was sensibly lengthened, and all its movements could be executed with ease.

The dislocation, however, recurred again and again, and was as often reduced. The difficulty was to maintain the bone after reduction. This, however, was effected by careful bandaging. The patient suffered considerable pain at times, but was relieved by the application of leeches. From the first reduction to the entire cessation of pain a period of more than two years elapsed; but the cure was then complete, the patient using the limb equally as well as the other. *Bulletin de l' Acad. R. de Méd.*, June 30, 1840.

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38. *Dislocation of both radio-carpal articulations.*—Mr. N. J. Haydon has recorded, in the *Lond. Med. Gaz.* (Sept. 1840;) a case of this accident, which is of very rare occurrence, and the present one is further interesting from the curious circumstance that in one person from the same accident and from a force *applied in the same manner*, there was in one limb a dislocation of the carpus backward and in the other forward.

The subject of this case was a boy 13 years of age, who had been violently thrown from a horse, and fell on the upper part of the palms of both hands and on his forehead. The scalp was lacerated about two inches in length over the left eyebrows: the left wrist presented a considerable protuberance on its anterior aspect; the styloid process of the radius no longer had its position opposite to the trapezium, but was thrown before the carpus, and took up its residence on the scaphoid and trapezium: the ulna was dislocated from the radius, and rested on the unciform bone, the forearm was slightly bent on the humerus; the fingers similarly flexed on the hand throughout their articulations. During the reduction of this wrist the patient complained of no pain.

The right wrist presented a very considerable tumor on its posterior aspect, occasioned by the presence of the carpal head of the radius and ulna, and a very irregular knotty tumor terminating abruptly on its anterior aspect, caused by the presence of the bones of the carpus. The forearm was very considerably flexed on the humerus, and in a state between pronation and supination; the thumb strongly abducted; the metacarpal phalangeal articulations in a state of the greatest extension on the metacarpus; the two extreme joints slightly flexed. There was a strong aversion to have the arm moved, the slightest motion causing extreme agony: there existed in this arm no dislocation of the ulna from the radius. A very careful examination was made to determine what parts came in contact with the resisting force. Very extensive bruises were found on the palms of both hands, but not the slightest on the back of either hand. There was not the slightest evidence of any fracture existing, moreover within an hour after the dislocations were reduced the patient could rotate the hand, and supine it when prone.

Reduction was effected in the following manner: the left elbow being fixed, extension was made from the hand, at the same time gradually flexing the hand on the forearm. The right wrist, the elbow being fixed, was reduced by firmly grasping the thumb, the operator's thumb being applied over the outer part of its metacarpal bone, while his index-finger firmly embraced its ball; gradual and direct extension was maintained for several minutes; when the carpus resumed its position, a very distinct and audible "*click*" was noticed by several persons present. Splints including the forearm and hand, with roller bandages, were applied, and retained for eighteen days, the parts being kept cool with evaporating lotions. The progress of the patient was altogether favourable. Seventeen days after the accident the splints were removed, the swelling having nearly subsided, and the wrists having regained sufficiently their power to admit of the usual movements of the hands being freely performed.

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39. *New Operation for the Cure of Vaginal Cystocele.*—By M. Jobert, Surgeon to the Hospital of St. Louis. The following is the substance of a report made to the Royal Academy of Medicine, by a committee consisting of MM. Blandin, Danyau, and Gimelle.

M. Jobert divides his memoir into three parts: in the first, he treats of the history of the disease, and the modes of treatment which have been hitherto employed for its removal. In the second, he proceeds to point out his method of obtaining a radical cure. In the third, he gives some new ideas, based on his pathological researches, with regard to the mode of formation of the cystocele.

Vaginal cystocle was treated of in the work of Leblanc, printed in 1775. Since that time, many surgical authors have noticed it; all have attributed it to a rupture or abrasion of the anterior wall of the vagina, allowing the bladder to pass into the cavity of the former, filling it by its distension, and causing a projection more or less considerable through the os externum. Until lately, palliative means alone have been adopted, which were totally incapable of effecting a radical cure. Pessaries under all forms can be but palliatives.

The well known operations of Marshall Hall, and Dieffenbach have been performed with success by Berard and Velpeau in cases of prolapsus uteri, in which the bladder and vagina have been also drawn down; by these means, the displaced parts may be retained within the cavity of the vagina; but in cystocele, M. Jobert says the bladder has an abnormal magnitude, and although it does not project from the vulva, it is, nevertheless, displaced, resting in such a manner on the perineal surface of the vagina, that the anterior wall of the bladder becomes superior. Thus, after the operation just named, though there is no external projection, the organ is not able to regain its ordinary size or position.

M. Jobert considers that in order to effect a radical cure, three things must be done: first, the bladder must be restored to its natural situation; second, the anterior wall of the vagina distended by the tumour must be reduced to its ordinary proportions, so as to maintain the bladder when replaced; but this latter result cannot be obtained by causing a loss of substance in this wall, and reuniting the edges according to the method of Hall, without injuring the orifice of the vulva. The proceeding has also entailed great difficulties in its execution, and possibly severe accidents, therefore the author substitutes, thirdly, the following method. He encloses within two curved transverse lines an oval space, more or less considerable, on the posterior surface of the tumour or the anterior surface of the vagina by means of caustic, so as to form an isolated spot, repeating the application of the caustic until the mucous membrane is destroyed. He then pares the edges with scissors or a bistoury, draws them together, and maintains them in apposition by means of straight needles, the points of which are removed, and a twisted suture.

Jobert operated in this manner on the 23d of July, 1838, on a female aged forty-five, of strong constitution, who presented at the aperture of the vulva a very large cystocele, which elevated the nymphæ and descended above the urethra and clitoris. The tumour was reddish. The patient easily returned and reproduced it. She often experienced acute pains in the abdomen, and the tumour became excoriated from friction. She had frequent desire to pass urine, the emission of which was often difficult. The tumour was five inches in length, from the orifice of the urethra to the neck of the uterus, and eight inches in circumference.

Seven needles were applied; four large and three small ones. They were lance-shaped, and were contained in sheaths, which alone were left to retain the threads when the suture was made. One of the large needles was applied to each extremity of the oval, formed by the circumscribed space, two others in the middle, the small ones filling up the intervals. A sound of gum elastic was introduced into the bladder and left there in order to prevent the accumulation of urine, and the distension of the viscus. The reunion of the edges of the wound arrested the flow of blood, and no accident occurred. Four of the sheaths of the needles which retained the sutures were removed on the 3d of August, the others fell of themselves on the 5th and 7th. The sound was discontinued on the 20th of the same month. The woman returned to her occupation as a laundress, and at the end of the month of January, 1839, the time at which she was examined, nothing unfortunate had happened.

Since this time, two other cases presenting the same symptoms as that just related were operated upon in the same manner by M. Jobert, and the result in all the cases has been equally favorable. Two of the committee appointed by the academy were able to testify to this in one case.

But after the cure of these patients, the anterior wall of the vagina underwent a contraction throughout its whole length, and the uterus was proportionally prolapsed. M. Jobert now prevents this inconvenience by applying the caustic in a vertical instead of transverse direction. In this way the vagina is retained, and remains of its full length, the uterus suffering no displacement.

Jobert has shown by his pathological researches that the anterior wall of the vagina is neither ruptured nor abraded in the displacement of the bladder called cystocele, but that this disease is the result of the relaxation of the superior pelvic facia, which having been distended by the elevation of the womb in successive pregnancies, loses its elasticity and no longer sustains the anterior wall of the vagina after delivery in a proper manner; and in this case, a fall, an effort, the habit of retaining the urine in the bladder for too long a period and in too great a quantity, are causes sufficient to produce the disease.

Jobert performed the same operation with success in a case of eversion of the mucous membrane of the posterior wall of the vagina; and the committee are of opinion that it may be practised in similar states of the same tissue in other natural passages. *British and Foreign Med. Rev.*, October, 1840, from *Bull. de l'Acad. Roy. de Méd.*, May 15, 1840.

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40. *New Operation for Prolapsus Ani.* By M. Robert.—Relaxation of the sphincter ani being the cause of this disease, all the remedies hitherto employed for its cure are inefficacious when it arrives at the last stage, as they can only act on the mucous membrane of the rectum. These reflections have induced M. Robert to shorten the sphincter in proportion to the amount of relaxation, so that the two cut surfaces of the muscle might unite and form a narrow ring to oppose to the descent of the mucous membrane. This operation was performed with success on a washerwoman, thirty-three years of age, in June, 1839, in the hospital of La Pitié. This woman in her third pregnancy had a prolapsus ani, which was only temporary though it caused some pain. Her fourth pregnancy produced a prolapsus uteri, a permanent and considerable prolapsus ani, with relaxation of the abdominal walls. M. Robert excised a portion of the mucous membrane with some temporary relief; but the disease afterwards increased, the discharge of fæces became involuntary, and she suffered from pains in the loins and upper part of the thighs. When she entered the hospital the sphincter was so much relaxed that four fingers could be easily introduced.

The patient having been prepared for the operation by progressive diminution in diet, and the use of opium in order to effect long-continned constipation, M. Robert proceeded to operate in the following manner:—An inscision was made on each side of the anus, each incision being commenced a few lines external to the orifice, and carried backwards towards the coccyx. The fold of integument between the incisions, together with the portion of sphincter it covered, were removed, and the muscle was thus shortened by half its length. The wound was united from one side to the other by three points of suture. On the sixth day after the operation the sutures were removed. Union was nearly complete, but a fistulous passage remained from the anus to the coccyx. On the fifteenth day the woman had not passed any fæces. On the next day the want of defecation being felt, in order to prevent any straining, the bowels were relieved by the curette. On the forty-first day the patient, who before the operation could not retain her fæces, kept an injection during the whole day; there was no more prolapsus; the opening had become of the ordinary size; but the finger when introduced did not experience the energetic contraction of the sphincter which occurs in the normal state. With the exception of a slight protrusion of mucous membrane the cure was complete in August.—*Ibid.* from *Gaz. Méd. de Paris*, June 20, 1840.

41. *On Certain Abscesses occurring in different parts of the Body, during the course of Diseases of the Urinary Organs.*—M. Civiale has observed that, sometimes during the progress of gonorrhœa and other diseases of the urethra, also in affections of the prostate gland and when there is stranguary or dysuria, or foreign bodies in the bladder, certain parts of the body, particularly the extremities and the larger joints, are attacked with pain, which may be dull and diffused, or acute and circumscribed, which is at first generally supposed to be rheumatic, but which terminates in the formation of large abscesses, differing in some respect from common phlegmons. M. Civiale states that these cases have escaped the observation of authors, but says that since his attention has been directed to them he has met with numerous examples. When these accidental pains first make their appearance, the patient complains of a peculiar "*empâtement*" (?) and numbness of the part, which come on before any swelling is apparent. These local symptoms are accompanied with lassitude, weakness, anxiety, and general constitutional disturbance which does not correspond at all with the degree of pain, which in the early stages is generally slight and diffused. As the case advances the pain becomes more acute, there is complete loss of appetite and sleep, great prostration of strength, the pulse being sometimes scarcely to be felt; rapid emaciation, dry tongue, troublesome cough, and lastly delirium. The disease often commences with a febrile paroxysm, which may return at regular intervals or be continued. Together with these symptoms the urine is often of a deep orange colour, and is excessively fetid, and when this state of the renal secretion is met with, the case is always very serious. Local redness and swelling of the painful part, with evidence of the formation of matter, frequently do not make their appearance till a late stage of the disease.

One peculiarity in this affection is a tendency in the local disease to shift its position, and it often appears in different places at the same time. The suppuration in distant organs is often accompanied also with the formation of an abscess in the scrotum, perineum, or neighbourhood of the urethra or bladder, which, however, form no communication with the urinary passages.

With regard to the causes of this disease, M. Civiale has not remarked any predisposing circumstances. All the cases occurred in adults. In four there was stricture of the urethra, during the treatment of which affection, (in one case, by cauterization, and in the three others by dilatation,) the abscesses were developed. In a fifth case there was serious disease about the neck of the bladder, and in several others there was urinary calculus, which had been broken down by the operation of lithotrity. In all the cases there seemed to have been some considerable irritation or inflammation of the urethra, or neck of the bladder, which appeared to give rise to the distant affection.

The peculiar state of the system, accompanied by the formation of these abscesses, is attended with considerable danger, and M. Civiale lost the first two patients which he treated.

The treatment found most efficacious was scarification of the whole of the affected surface in the early stage (from which a reddish or yellow coloured serum is generally discharged for several days in considerable abundance,) and then the use of emollient poultices. This plan will sometimes cut short the disease, but if the inflammation has reached the deep-seated cellular tissue of the limb between the muscles, this texture becomes indurated, and a vast abscess soon forms; several large deep incisions must now be made completely through the affected parts which will allow of the escape of the matter, and also unload the distended vessels. The surgeon must not always wait for the sense of fluctuation to be apparent, before he makes his incisions, for great relief will be afforded by cutting through the inflamed and indurated tissues before pus has actually been secreted, and the progress of the disease may be thus arrested. M. Civiale does not make any remarks concerning the general or constitutional treatment of the patient, but we presume that this must be conducted on common principles.—*Ibid.* from *Bulletin Gén. de Thérap.*, April, 1840.

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42. *New facts with regard to Strangulated Hernia.* By M. Laugier.—Every one knows that in strangulated hernia, the upper extremity of the intestine, or that part which is comprised between the stomach and the seat of strangulation, becomes distended by fluid, gaseous, or fecal matters, whilst the lower portion remains flaccid, or, at least, the matters found in it do not distend it more than usual.

No attempt has yet been made to draw practical inferences from this fact, so as to use it as a means of distinguishing intestinal from omental hernia; or which portion of the intestinal tube, whether the large or small intestine, was contained in the hernial sac. This has, however, been done by M. Laugier, who considers it both as a simple and sure means of diagnosis, besides possessing the additional advantage of indicating the relative urgency of the case for operation. The results of his observation are embodied in the following conclusions.

1. The extent, the form, and seat of the meteorism of the belly, during strangulated hernia, vary according as the hernia consists of omentum or intestine, and according as the upper extremity consists of the small or the large intestine. Its extent varies also according as the portion of small intestine included in the hernia is more or less distant from the stomach.

2. In omental hernia, before the development of peritonitis, the belly is soft, and flat even in the neighbourhood of the hernia. There is no meteorism.

3. Meteorism appears very rapidly when the hernia consists of intestine.

4. When the hernial sac contains the large intestine, the sigmoid flexure of the colon for example, the upper extremity consisting of nearly the whole of the intestinal tube, the meteorism is general, and gives to the abdomen an almost cylindrical form.

5. If the small intestine is alone in the hernial sac, or along with a portion of omentum, the flakes and the epigastric region are soft and depressed; the swelling of the abdomen occupies the hypogastric and umbilical regions. The swelling is spherical, or nearly so, resembling in this respect some encysted tumours, or the uterus at the sixth or seventh month of pregnancy, from which, however, it differs in many essential characters.

6. When the strangulated part of the intestine is near the stomach, the swelling of the abdomen is trivial, in proportion to the duration of the strangulation; for in that case the upper extremity of the tube is only of small extent.

7. From these facts may be deduced the unexpected and important conclusion, that in crural hernia, and in some inguinal hernias, where gangrene is most to be feared, all haste should be used either to reduce it by the taxis or by operation; for if by the occurrence of gangrene of the intestine an artificial anus should be formed, its proximity to the stomach renders it more dangerous for the patient. A swelling of small extent, limited to the neighbourhood of the hernia generally, inspires a security which may lead to fatal results; whilst it is the general meteorism, or one, at least, which is very extensive, that alone permits of delay, since it indicates the incarceration of a portion of intestine which is far from the stomach.

8. It is only before the accession of general peritonitis that the characters of the windy swelling, above indicated, can be relied on; they are most marked at that stage.

M. Laugier adds, that these remarks have been all verified by careful clinical observation, and by the result of many operations for hernia.—*Ed. Med. and Surg. Journ.*, July, 1840, from *Comptes Rendus*, 2d March, 1840.

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43. *Radical cure of Inguinal Hernia by the Horizontal Position.*—M. Ravin some time ago made known to the public his new mode of curing hernia radically, by merely confining the person, for a length of time, strictly to the horizontal posture, and applying over the abdominal ring gentle compression, &c. M. Biagini has lately verified this statement, by having had a patient who was afflicted with a large inguinal hernia, which had existed for two years, accidentally confined to his bed with another disease for upwards of three months. At the end of this period, when the man arose, to his delight, he found that the hernia did not return. No tumour was perceptible in the region of the inguinal canal, and he could cough and exert himself in every way without producing a return of the complaint. The man was 32 years of age.

This case confirming the views of M. Ravin, appeared to justify M. Biagini in drawing the following conclusions:

1. That it is possible to obtain a radical cure of some herniæ by the horizontal posture long continued.

2. That this cure takes place in consequence of a diminution in the size of the side of the canal and the contraction of its walls, which again assume the oblique course, which they had lost; which changes take place in virtue only of the tonic powers of the tissues.

3. That in order that the tissues should have sufficient tonicity to produce this important change, the person must be possessed of considerable vital energy; a circumstance which will prevent old men from being treated by this plan, both on account of their general weakness, and the danger of a long-continued horizontal posture to them; and lastly, it would be of no use in very large herniæ, where the canal is reduced to the state of a simple ring, and so altered, that no tonic force of the parts could restore it to its normal condition.—*Ibid.* from *Bulletino delle Scienze Mediche*, January, 1840.

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44. *Foreign Body in the Larynx.*—A young child, while playing with common beans, allowed one to escape into the larynx. The usual symptoms of suffocation were immediately induced, but were calmed, as by enchantment, by the administration of a tablespoonful of olive oil. Whenever the symptoms of suffocation recommenced, they were found to be relieved by the administration of the oil; the operation of tracheotomy was therefore not performed, and on the fortieth day after the escape of the bean into the larnyx, it was coughed up in fragments.

M. Renauldin mentioned a curious fact with regard to the presence of a foreign body in the air-passages. On opening a body, a fragment of a nail was found in the lung; and yet no symptom existed during life, which could have led to the supposition that a fragment of iron was contained in these organs.—*Ibid.* from *Séances de l'Acad. Roy. de Méd.*, January 28, 1840.

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45. *Successful Treatment of Dropsy of the Synovial Membranes by Tartar Emetic.* M. Gimelle has found the administration of tartar emetic in large doses very efficacious in curing dropsy of the synovial membranes; causing complete absorption of the fluid, with abatement of all inflammatory symptoms, if any exist. Twenty-seven cases of dropsy of the joints have been treated successfully by him. He, without any previous treatment, commenced by giving four grains of tartar emetic in the twenty-four hours, and increased the dose by two grains every day, till from eighteen to twenty grains were taken daily. As soon as toleration of the medicine was established, the fluid began to be absorbed, and the cure was in general complete in from eight to sixteen days.

In only five of these cases was vomiting excited by the medicine, in two cases for three days. In eight cases it produced alvine evacuations; but its most general and constant effects were diminution of the strength and quickness of the pulse, weakness of the voice, abundant nocturnal perspirations, and the appearance of a dark circle around the eyes. In almost every case the appetite remained unimpaired. M. Gimelle regards this plan of treatment as the most successful ever yet proposed for the treatment of dropsy of the synovial membranes.—*Ibid.* from *Bulletin de l'Acad. Royale de Méd.* July 4, 1840.

46. *Treatment of Syphilitic Ulcers by Ioduret of Iron.*—M. Baumes, chief surgeon of the hospital at Lyons, has of late used this new ferruginous preparation with most satisfactory results in the treatment of old and obstinate syphilitic ulcers, especially when the state of the system of the patient was at the same time feeble and scrofulous. He administered it in the form of pills with Thebaic extract, increasing the dose of the ioduret from two or three to twelve or twenty grains in the course of twenty-four hours. Along with the cicatrisation of the sores, the improvement of the general health was most remarkable; the appetite improved, the muscular strength increased, and the complexion acquired the florid hue of vigorous health. The salt, no doubt, is taken into the circulation, and acts on the blood itself, as well as on the capillary vessels in every part of the body.—*Med. Chirurg. Rev.* Oct. 1840.

47. *Compound comminuted fracture of the Elbow—cure without Amputation.*—The 3d of last January, M. Lallemand presented to the Society of Practical Medicine of Montpellier a man 32 years of age, who had been cured of a very serious wound. This man whilst at work, in February, 1839, in building a house, was struck by a large beam, which fell from a height of about twelve feet, and which caught his right arm against a stone and crushed a great part of the elbow. A portion of the fractured articular extremities of the ulna and the humerus had to be extracted, and the elbow joint was extensively opened. This workman entered the hospital seventeen days after the accident in order to undergo amputation. M. Lallemand, considering the robust constitution of the subject, determined to wait. Healthy granulations soon sprouted from the bottom of the wound, and the cure was complete at the end of three months. At the time of presentation, the humero-cubital articulation was anchylosed, but the superior radio-cubital articulation was capable of motion; nevertheless, nearly all the motions of pronation and supination were performed by the aid of the scapulo-humeral articulation.—*Lancette Française—Journ. de Soc. de Méd. prat. de Montpellier*, Mai, 1840.

48. *Memoranda on Cutaneous Transplantations.*—When erysipelas comes on in the face after a rhino-plastic operation, it is usually arrested at the edges or limits of the restored part. This was especially remarkable in the case of a patient operated on by Dieffenbach, at the hospital St. Louis in Paris.

M. Ricord also has published a similar instance. On the seventh day after the operation, the patient began to experience pain under the chin, and at this part an erysipelatous redness was visible. Next day this had extended over the entire face, the newly-made nose alone remaining intact; it was cold, insensible, and, as it were, indifferent to what was going on all around it. Although the local inflammation was very severe, it was ultimately subdued; yet at no time did the new nose participate in it.

Dieffenbach mentions that one of his patients, on whom he had operated, was attacked with jaundice, during which the entire face—with the exception of the nose, which remained white—became as yellow as a guinea.

M. Phillips insists very particularly on the necessity of keeping the newly-formed organ very cool with refrigerant lotions, and even of drawing blood freely from it as well as from the adjacent parts, and never of applying—as has too often been done—spirituous or other stimulating washes for the purpose of exciting the circulation. The condition of the transplanted tissues seem to be very nearly analogous with that of frost-bitten parts; in the case of which, it is well known, the application of heat and exciting substances must be carefully avoided. As illustrative of the same fact, M. Phillips goes on to state:—

. . . . "Dieffenbach remarked that in cholera patients, who recovered, the healing of wounds was effected with greater rapidity than in persons in perfect health; as if the diminished activity of the cutaneous circulation rendered it better fitted for any plastic processes. He observed that the wound bled very little, if at all, the dermis being almost void of blood; and that the edges of the incision were not red as usual, but rather of a yellowish-red colour. . . . . Again, if we call to mind the surprising unions of parts which have been entirely separated from the body, are we not led to conclude that the immediate union of wounds will be the more readily effected just in proportion as the parts are the least gorged with blood? The management, therefore, of rhino-plastic injuries should be so directed as to bring and keep the tissues in this state of vacuity."

M. Phillips proceeds to point out an error which is too commonly committed by most surgeons in the treatment of recent wounds, that of bringing the edges in contact as quickly as possible after their division, and before the oozing of blood has ceased. Now, it is not until this has quite stopped, that the secretion of the coagulable or plastic lymph commences; and it must surely be obvious that, if any coagula of blood are interposed between the lips and the wound, the agglutinative process must necessarily be impeded. Dieffenbach observed, in some experiments which he performed on rabbits, that the chances of union, after the transplantation of a portion of the integuments, were always greater when the flap was not replaced for several minutes after it had been excised.

"In most of the cases, too, of successful union of detached noses or fingers in the human subject, some time has accidentally elapsed between the occurrence of the accident and the re-application of the part."

. . . . . "That a vitality continues for a considerable time in parts detached from the body, is often very apparent after some operations.

"Thus in a case of hydro-sarcocele, where Dieffenbach removed a large portion of the skin along with the diseased mass, he noticed that, in about a quarter of an hour afterwards, this portion of skin had contracted upon itself, so as to exhibit the usual puckered appearance of the scrotum on leaving a very cold bath. On stretching it out, and pouring cold water upon it, it again contracted into numerous wrinkles."

M. Phillips proceeds to state that—

"When a part is entirely detached, its natural red colour disappears, and it becomes very pale, although very little blood has flowed from it. The vessels of the surface contract, and drive the blood into the sub-dermoid tissues. In a few minutes after the separation, this great paleness diminishes; some dark blood oozes from the divided edges; and we may ascertain with a magnifying glass that it is expelled by the contraction of the vessels. If the blood be wiped away, the wound again becomes red; but the blood is now thinner, and if again removed it becomes quite watery, and the edges begin to be coated with coagulable lymph; they then contract upon themselves, so as to cause the centre to bulge out."*

Should the hæmorrhage from any of the divided blood-vessels, after autoplastic operations, prove troublesome, *tortion*, and never the *ligature*, should invariably be had recourse to. The presence of a ligature, however minute, is always most unfavourable to immediate union. If the stopped blood-vessel seems gorged with blood after the hæmorrhage has ceased, one or two scarifications should be made, to remove the sanguineous congestion; which we have already explained is very prejudicial to the success of the reparative process,

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* The convexity of the flap exists even after the most successful union; it is the more decided when the substance of the flap is thin, and much less so when a layer of muscular substance has been detached at the same time.

This tendency of the flap to contract around its edges, so as to cause the centre to become convex, is of great utility in rhino-plastic operations; as it is by this invariable law that the surgeon is able to secure a proper prominence to the new nose. When a flap has a free edge, which is not brought and kept in contact within another incised surface, this edge turns inwards upon itself and contracts very close adhesions. It is in this manner that the nostrils of the new organ are apt to become quite obliterated, if precaution has not been taken to evert and secure by a stitch or two a portion of the flap, so as to induce an immediate union.

M. Phillipe thus points out some of the anatomical conditions of the flap taken from the forehead in a rhino-plastic operation, on which its success very materially depends.

"It is indispensible that it should contain one artery at least. Hence the importance of prolonging the incisions to the angle of the eye, so that the pedicle of the flap contains the internal angular artery to supply it with blood. And then again, it is equally necessary that the blood, which is conveyed to it by the arteries, should be returned by veins, else the new nose will perish from congestive asphyxia. Indeed it is wonderful that this does not occur oftener than it really does, when we consider that not only are almost all the direct communicating branches between the arteries and the veins cut across, but that the blood in the divided arteries is prevented, in a great measure, from escaping, in consequence of the compression of the edges of the flap by the numerous sutures used to retain it in position."

"The destruction of the flap may arise from three different causes—from defective circulation, from excessive or superabundant circulation, and from suppuration.

"If the pedicle be twisted too firmly, the vessels must necessarily be compressed, and the circulation through them be consequently more or less interrupted; the flap in consequence becomes pale, loses its heat, and speedily mortifies. But this does not occur so frequently as the mortification from accumulation or congestion of blood in consequence of its obstructed return through the veins. Under such circumstances, the mortification usually takes place in that part of the flap which is furthest distant from the pedicle.

"After the asphyxia now described, suppuration is the most formidable evil to be dreaded in the management of rhino-plastic operations. The destruction commences at the edges, which swell, puff out, and separate from each other. This calamity is more apt to occur when the twisted suture has been used."*—*Med. Chirurg. Rev.* July, 1840, from *Bulletin Méd. Belge.*

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49. *Therapeutic Considerations on Obliterations of the Veins in the Treatment of Varix and Varicose Ulcers.*—M. Jobert relates in the *Bulletin Gén. de Thérap.* for May, 1840, six cases, and he says that he could describe twelve others, in all of which the treatment of varicose veins by producing the obliterations of their trunks by needles and twisted sutures, or other means, though at first it seemed promising, had ultimately proved completely unsuccessful. In all the patients who were thus treated the varicose ulcers returned a short time after they left the hospital, as it was believed perfectly cured; and the return took place in these cases more rapidly than in all probability it would if only the ordinary treatment by rest, poultices, and bandages had been pursued.—*Brit. and For. Med. Rev.* Oct. 1840.

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50. M. Guerin *on Subcutaneous Wounds.*—Every one has heard of the proposal, or rather now the practice, of M. Guerin of Paris, in the treatment of lateral curvatures of the spine—the subcutaneous division of several of the muscles of the back.

From what he recently stated to the Royal Academy, he has met with extraordinary success. "I have, in nearly fifty cases, divided more or less completely most of the muscles of the back and spine—viz: the trapezius, the rhomboideus, angularis scapulæ, sacro-lumbaris, and longissimus dorsi. In each of these operations the wound of the muscle has been from three to four inches in length, and sometimes from one and a half to two and a half inches in depth, when the sacro-lumbaris and longissimus dorsi muscles were completely divided: in those cases where the trapezius and rhomboideus were entirely cut across, the bistoury traversed at least from four to five inches, or more, under the skin.

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* If the destruction from this cause be considerable, it may be necessary to perform a second operation, and re transplant a fresh portion of healthy integument. But if it be only at one angle, we may succeed by the repeated application of the tincture of cantharides, in exciting the granulating process sufficiently to fill up the ulcerated space.

"In almost every one of these cases, no local inflammation nor constitutional feverishness supervened, and by the third day many of the patients were able to rise up and walk about without support. This most pleasing exemption from the accidents which so often follow upon ordinary wounds, is entirely attributable to the circumstance of the air not coming in contact with the freshly-divided surfaces: the tendency to inflammation seems scarcely to exist, and the parts commence and complete the reparative process without interruption or pain."

In addition to a multitude of experiments performed on dogs, M. Guerin has established the perfect innocuousness of subcutaneous wounds in operating for the relief of various forms of distortion. He has divided the sterno and the cleido-mastoid muscles (separately, simultaneously or consecutively) for wry-neck twenty-five times: in every one of these cases—the section having been made under the skin—the wound healed without the smallest trouble. Occasionally the operation was effected with considerable subcutaneous effusion of blood; but this was usually absorbed in twenty-four hours or so, and the reparative process then rapidly took place. Again, the operation of dividing the tendo-Achillis for club-foot he has performed upwards of 200 times; and in all these also he has been equally successful. In the practice of other surgeons, indeed, inflammation and suppuration has followed this simple operation, but these troublesome consequences are, we suspect, always owing to the outer wound having been made too large, and the air having thereby been permitted to enter.

"That such is the case is surely sufficiently proved by the success which has attended my operations. I have now performed the subcutaneous section of different tendons and muscles in upwards of 500 cases; and in not one instance has any troublesome inflammation of the wound supervened."

The great object, therefore, of the surgeon should be to prevent the entrance of the external air into the wound.

"From all these circumstances," continues M. Guerin, "I infer that subcutaneous wounds so quickly heal in consequence of the exclusion of the external air; and that it is from this fluid (the air) neither physically obstructing the circulation, nor chemically modifying the properties of the blood, nor altering in any degree its vital constitution, as well as from its not exerting any hurtful influence on the nerves and other parts which are protected from it, that the lacerated or divided tissues coalesce and unite by the first intention without any of the usual inflammatory symptoms."

That there is much truth in this observation is apparent from the surprising rapidity with which extensive effusions of blood are absorbed, and laceration of the soft tissues after some dislocations and bruises are healed, when there is no outward wound communicating with the seat of the injury. The great source of danger in compound fractures and dislocations is doubtless in the exposure of the lacerated parts to the action of the atmosphere. The dangerous effects of the admission of the air into the sacs of large abscesses is also well known to every surgeon.

Postscript.—The principle of subcutaneous division may be advantageously applied to other operations, besides that of the section of contracted muscles and tendons in cases of deformity.

In a recent number of the *Gazette Médicale*, we observed that M. Barthelemy, surgeon of the Hospital *Gros Caillou* at Paris, has strongly recommended this method of dividing sinovial tumours. He slides a longish narrow-bladed scalpel under the integuments, and cuts the tumour fairly across in the middle, so that all its contents must be extravasated into the surrounding cellular tissue: the knife is then withdrawn by the small puncture, and firm compression is made on the part for a few days.

M. Barthelemy mentions three cases in which this mode of treatment has been quite successfully adopted. He suggests also, that perhaps other kinds of tumour may be advantageously treated in the same manner.

M. Malgaigne also has adopted in one case, where there were several ganglions or sinovial swellings over different joints, the method of dividing the tumours fairly across from side to side under the integuments. He suggests its applicability to the treatment of some cases of hydrocele.—*Med. Chirurg. Rev.*, July, 1840, from *Gaz. Méd. de Paris.*

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51. *On Subcutaneous Wounds of the Joints.*—M. Jules Guerin has communicated to the Academy of Medicine, a memoir on this subject, in which he endeavours to show from experiments on man and the lower animals, that subcutaneous wounds of the joints, (*i. e.* those not involving the skin,) as of the tendons, muscles, aponeuroses, cellular tissue, nerves, and minute vessels, may all, by means of particular precautions, be healed by the first intention.

His first experiments were made on animals. He opened successively on two dogs, by the subcutaneous method, the humero-cubital, radio-carpal, femoro-tibial, and tibio-tarsal articulations; and when no air was allowed to come in contact with the opened joint, they healed immediately without exhibiting any traces of inflammatory action. When these articulations were, however, left free in their motions, synovial tumours formed around the joint; but if they were kept in a state of repose, and permanent extension, the cure was completed without any accident whatever. When the wounds were made so as to allow of the contact of air, or its introduction into the joint, inflammation and suppuration were excited, proportioned in extent and intensity to the duration of the contact of the air.

His next experiments were on man. Acting on the results furnished by these experiments, and also on what is every day observed in man, where, in luxation of the shoulder or hip-joints, though considerable injury is inflicted on the capsular ligament and neighbouring parts, no inflammatory symptoms are set up, provided the skin be not torn, he ventured to operate on man. He has many times made a subcutaneous section of the ligaments, and a portion of the fibrous capsule of the knee, and of the foot, to remedy deformities of these joints; and in no instance have these operations been followed by inflammatory action.

The precautions which must be taken in order to insure the subcutaneous wounds of the joints from inflammatory accidents, are, to make the aperture in the skin very small, and as far as possible from the articulation; to make it while the limb is extended, and not when it is bent; and to keep the limb after the operation in the most perfect state of repose. These two last directions are the consequences of a theory which M. Guerin has endeavoured to establish, which is, that articulations are, during their movements, the seat of a partial temporary enlargement, which causes in them a tendency to produce a void; so that if the limb was flexed or extended after the operation, a suction takes place at the orifice of the wound, and air is drawn into the joint.

In the third part of his paper, M. Guerin shows the practical uses of his discovery in the art of surgery. Serous, sanguineous, and purulent collections of matter in the articulations may, by the same means, be drawn off with safety. But it is chiefly to its advantages in aiding the reduction of old luxations, or removing deformities by incising the ligaments or tendons, that M. Guerin directs the attention. He has already by this means cured a congenital luxation of the clavicle which had resisted all known means. He made numerous incisions of the ligamentary apparatus around the head of the bone, and after two operations, so conducted, succeeded in bringing it into its proper place, and curing completely the deformity.—*Edinburg Med. and Surg. Journ.*, October 1840, from *Séances de l'Acad. des Sci.*, May, 1840.

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52. M. Guerin *on Club-Foot, Wry-neck, &c. &c.*—In a lecture which this gen-

tleman recently gave, of the results of his clinical practice, during a period of three months, in the treatment of various sorts of deformity, he thus explains his views as to the primary cause of club-foot, and of congenital irregularities of the joints, as well as of some kinds of deformity affecting the spine.

This cause, in his opinion, is the contraction, acting unequally and irregularly, of the muscles of the part.

"All congenital articular deformities are, like club-foot, the effects of convulsive muscular contraction; and the various sorts of these deformities are the results of the combinations of this contraction differently distributed in the muscles of the trunk and of the limbs."

In confirmation of the truth of this opinion, he alludes to the state of the muscles of the calf in cases of club-foot: they are hard, unyielding, and, as it were, matted together; the tendons are stiff and projecting, and so tense as to resist all attempts to restore the joint to its right position. The muscles chiefly affected in club-foot vary in the different varieties of this deformity. Thus, when the foot is twisted outwardly, the tibiales, anticus and posticus, are the most contracted; when it is turned inwardly, the tibialis posticus, the adductor, and the flexor pollicis are at fault; in cases of valgus with abduction of the foot, the interior and lateral peronei are chiefly affected; and in complex club-foot, the extensors and the flexors of the toes are all more or less unnaturally contracted. In addition to the irregular contraction of certain muscles, there is in some cases, at the same time, a greater or less degree of partial paralysis.

The following table will indicate, in a certain degree, the comparative frequency with which different muscles of the leg are apt to be affected in club-foot:—

In 17	cases,	the tendo Achillis	was divided.
12	„	the tendon of the tibialis ant.	was divided.
3	„	.. .. .. „ post.	„
1	„	.. .. .. extensor dig.	„
4	„	.. .. .. extens. pollic.	„
1	„	.. .. .. peroneus ant.	„
3	„	.. .. .. flexor digator.	„
3	„	.. .. .. flexor poll.	„
2	„	.. .. .. abductor poll.	„
3	„	.. .. .. flexor brevis dig.	„
5	„	.. .. the aponeurosis plantaris	„
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"You thus see, gentlemen, that the tendons of every muscle of the leg, with the exception of the lateral peronei,* have been divided. Conformably to our principles, we have attacked each variety of the deformity, by the section of the tendon or tendons producing it. In no one instance have we failed: you have seen successively disappear the different elements of each deformity by the practice that has been pursued. Where my predecessors were satisfied with restoring the normal *direction* of the foot by the division of the tendo Achillis, we have laboured to effect the complete restoration of its *forms*, the removal of the *curvatures* of the plantar arch, of the forced abduction of the foot, of its curvatures inwards, of the subluxation of the toes, and of the twisted position of the foot—elements, the cause and mechanism of whose production were quite misunderstood, and the proper treatment of which had been quite overlooked."

M. Guerin next alludes to the various auxiliary means, such as manipulations, bandages, plaster of Paris moulds, and machines, used in the treatment of club-foot and other such like deformities.

He admits that each of them is respectively useful in certain cases. By well applied manipulations, after the contracted tendon or tendons have been divided, the foot may sometimes be at once restored to its right position almost as speedily as when a dislocation is reduced. When, however, the resistance is much greater, then recourse must be had to bandages, instruments, and plaster moulds. M. Guerin speaks in terms of high praise of the last-named means.

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* These muscles were divided in a case which occurred subsequently to the delivery of the lecture.

"When the deformity has been very great, and the resistance is so decided as to prevent the adjustment of the limb either with the hand alone, or with the aid of instruments, (after the section of the contracted tendons,) or when the skin is so tender that a sufficient degree of mechanical compression cannot be employed without risk of injury, then the plaster mould, by distributing an equal amount of pressure on every point of the limb, and by retaining and concentrating on its surface the cutaneous exhalation, is by far the best means for overcoming the resistance, and repairing any injury to the integuments which may have been caused by the use of either bandages or instruments. Such circumstances have several times occurred in our practice during the treatment of the extreme and complex sorts of club-foot, in children of from two to four years of age."

The period of time required for the cure of club-foot varies a good deal according to the duration, and the particular form or variety of the deformity that exists. About four weeks may be considered to be about the average time required; but some cases do not require above three weeks, and others need nearly three months before a complete cure is obtained. Whenever the case is of a complicated nature, as when the primary or essential deformity is associated with other deviations from the normal shape and direction of the foot, the treatment required will necessarily be not only more protracted and troublesome, but is seldom so perfect and complete as in simple cases.

Besides the cases of club-foot treated at the Clinique of M. Guerin, there were ten cases of *wry-neck* admitted. His remarks on this deformity are to the following purport:—

"You now know that the two phases—the ancient and the recent—of this deformity are two morbid states, very different from each other, of the muscular system, and which require different methods of treatment. We have already explained to you that permanent *contraction* (contracture) is very different from *retraction*, and we have insisted the more on this distinction, seeing that no surgeon had attended to it before ourselves. The *former* is the spasmodic shortening of a muscle, without any appreciable alteration of its tissue, so that if the contracted muscle were stretched out, all its normal characters would be at once restored. The *latter*, on the contrary, is that shortening produced at first indeed by contraction, but in which the texture of the affected muscle has become subsequently more or less deeply altered, and has thus assumed a greater or less degree of a fibrous or of a fatty consistence.

"Attention to the distinction between these two very different conditions of a contracted muscle is necessary to the establishing of a scientific practice. If there be simple *contraction*, we may hope to effect an elongation of the contracted muscles by means of extension, rubbing, shampooing, &c.; whereas, if there be genuine *retraction*, the only rational method of relieving the deformity consists in dividing the affected muscle.

"We have exemplified this distinction, before your eyes, in the treatment of wry-neck, according as the deformity has been of old or of recent formation; and the success which has attended our practice has abundantly proved the correctness of the diagnosis now pointed out.

"Among the most useful means to promote the elongation of muscular contraction is the use of friction with antimonial ointment: the eruption which this excites has seemed to me to prepare the way for the more successful employment of extension. In three cases of wry-neck treated before you, the re-adjustment of the head has appeared to be intimately connected with the eruption of the pustules over the contracted muscle."

M. Guerin subsequently alludes to the operation of dividing the biceps, semitendinosus, semimembranosus, rectus internus, Sartorius, &c. for relieving the deformities of the knee and hip. He concludes by stating that—

"During the last four months I have performed before your eyes 68 operations of dividing tendons and muscles, in not one of which has any troublesome symptom supervened, and all of which (with upwards of 400 other cases of analogous operations performed by me during the last four years) tend to confirm the truth of my theory of *subcutaneous wounds*, and establish the superior advantages which I have attributed to this method of operating over the usual one."—*Med. Chirurg. Rev.* July, 1840, from *Gaz. Méd. de Paris.*

53. *Treatment of Diseases of the Testicle by Compression.*—LANGSTON PARKER, Esq., extols this practice as possessing great advantages over the ordinary methods. "In common swelled testicle compression may be employed," he says, "as soon as the patient is able to bear the application of the plasters; and this is generally much sooner than might be supposed, however acute the disease may be. The great advantages possessed by compression are, almost immediate relief to pain; which is occasioned, in great measure, by the dragging and weight of the inflamed organ, and is mitigated, and most commonly completely removed by its support: the patient can pursue, in most instances, his ordinary duties, and there is no occasion to confine him to bed; a circumstance of great importance where concealment is wished, as it always is, in diseases of this kind. In addition the cure is much more quickly, and much more perfectly effected by compression than under the ordinary method, the swelling of the gland more rapidly subsiding, and less commonly leaving behind it any chronic irritation and enlargement, which is liable at some future time, in bad constitutions, from injury, or from a renewal of the disease, to degenerate into some of the malignant forms of disease of the testis.

"Chronic inflammation and enlargement of the testis also very commonly occurs as one of the symptoms of constitutional syphilis, as well as from other causes. Here, also, compression, as a local remedy, is by far the most valuable of any with which I am acquainted, particularly in those cases where enlargement of the organ, from chronic inflammation, has taken place to a considerable extent, where the weight chiefly incommodes the patient, and little or no tenderness is experienced when the part is handled.

"I am not prepared to say how far compression may be of service in the incipient stages of certain forms of malignant disease of the testis, but believe much advantage may be derived from its employment, since, in addition to the benefit to be looked for from mere compression of the part, much good may be expected from the constant topical application of mercury, iodine, and other remedies, only to be well accomplished in this way.

"Compression of the testis is to be practised by surrounding the organ by straps of plaster, applied as closely and as tight as the patient can bear. The plasters I generally use are those of ammoniacum, with mercury, or iodine and belladonna. These are to be smoothly spread upon thick wash leather, and cut into thin straps; an assistant then grasps the testicle, and draws it as far downwards as he can in the scrotum, which should previously be washed with a little spirits of wine. The first strap should be placed at the upper part, circularly round the testis, and succeeded by others, placed in the same direction, till the whole is covered. A second series of straps is then to be placed in an opposite direction to the former, crossing them at right angles, from behind forwards. One or two long ones may then be placed over these, where they appear to be most needed, to keep the whole in place. The parts should be supported by a well-fitting suspensory bandage, although the plasters at once relieve any inconvenience or pain that may have been occasioned by the dragging or weight of the testicle."—*Lancet*, July 25, 1840.

54. *On the Etiology and Treatment of Congenital Luxations and Pseudo-Luxations of the Femur.* By Dr. J. GUERIN.—I have established it as a fact, in my History of Deformities of the Osseous System, that the greater number of congenital articular contractions are the product of primitive muscular retraction. . . . . . I conclude: 1. That congenital luxations of the hip-joint are, like

club-foot, torticollis, and spinal deviations, the product of primitive muscular retraction, and that the kind of luxation depends upon the direction in which the retraction happens. 2. There exists an order of deformities of the hip-joint not hitherto indicated, and to whom I apply the term of *pseudo-luxations*, because they look like luxations, although the head of the bone remains in the cotyloid cavity. These vary as do the complete luxations, and from the same causes. 3. The essential treatment consists in division of the retracted muscles. I have thrice performed this operation with success. The congenital luxations and pseudo-luxations of joints depend in the majority of cases on primitive muscular contraction, which takes place in three different modes: by shortening, by paralysis, and by stoppage of development of the retracted muscles; and the different varieties of these deformities are, like those of the neck, the spine, and the foot, the effect of this retraction differently distributed in the muscles of these parts. In a girl aged fourteen years, I divided the biceps, semi-tendinous, semi-membranous, and rectus internus, for two complete luxations of the knee, produced by primitive retraction of these muscles; on each side there was subluxation of the tibia backwards upon the condyles of the femur, rotation of the limb outwards through the space of about one-fourth of a circle, and an inclination outwards of the leg upon the thigh of about sixty degrees. The rotation outwards, the lateral inclination and the gliding backwards of the tibiæ, were reduced on the day following the operation to the simple normal flexion of the leg upon the thigh, and since that period there remained nothing more than a certain degree of permanent flexion of the joint. In order to convince those who feel any doubt respecting the safety with which these operations may be performed, I may add that, on the same day, I successfully divided in the young female above mentioned thirteen muscles or tendons beneath the skin, for the relief of certain deformities from which she suffered; on the following day, she felt no kind of pain nor indisposition, nor were there any symptoms of inflammation in any one of the divided parts.—*Brit. and For. Med. Rev.* Oct. 1840, from *Gaz. Méd. de Paris*, Jan. 25, 1840.

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55. *Puncture of Brachial Artery—compression—cure.* By John Barrett.—A patient "was bled for some affection of the chest, and the brachial artery unfortunately wounded: the hæmorrhage was profuse. A compress was immediately applied to the wound, and the arm bandaged from the hand to the shoulder. The limb was kept in a state of rest for a fortnight; no bad symptoms occurred, and, at the end of this time, the bandage and compress were removed. Pulsation was found in the artery at the point of puncture, but there was no aneurism, and no further treatment was necessary.

"The patient died at the end of five weeks after the accident, from the chest affection, for which he had been bled, thus giving an opportunity not often met with of examining the state of the parts. There was a slight effusion of serum about the neighbourhood of the puncture; a cicatrix in the postorior wall of the vein; condensation of the cellular structure between the artery and the vein, giving it a thickened sensation to the fingers when squeezed between them; an orifice in the anterior wall of the artery about a line in diameter, filled with a plug of lymph apparently becoming organized, and which looked like a small coagulum: the edges of the orifice were everted, as if they had been driven out by the stream of blood rushing from the artery: both the artery and vein were as pervious as in the natural state.

"It would seem, from this case, that the process by which a punctured artery is healed is not always by the formation of a coagulum *external* to the artery, and the effusion of coagulating lymph between the edges of the wounds; for though, no doubt, extravasation did take place in this case into the cellular substance, causing the thickening perceptible between the artery and vein, still this only acted immediately by allowing the formation of a plug in the arterial wound. This plug had not the appearance of coagulating lymph effused between the edges of the wound, for they were everted, but was evidently a coagulum formed by the stream of blood which had caused the eversion.

"In disease of the heart I have seen coagula adhering to the internal serous coat, and becoming organized, and so, no doubt, might this plug, and thus would the obliteration of the puncture have been effected if the patient had lived long enough.

"This case also shows that an operation is by no means always necessary when this accident occurs. Two other cases have come to my knowledge where the compress and bandage were successful; but the use of the bandage is necessary, rest being enjoined. The mere employment of compression at or above the wound can only be justifiable as a temporary expedient, and then it exposes the patient to great suffering, and, if persisted in with any view of cure, may lead to a fatal result. This happened in a case of puncture of the artery from bleeding, the limb becoming frightfully œdematous, and such a state of exhaustion taking place as not to allow of an operation.

"In a case which came under my own care, of a scythe-wound of the posterior tibial artery, the cure had been attempted by compression at and above the wound. The wound was sloughy, and the patient so exhausted by the repeated attacks of hæmorrhage, that a few days more must have terminated his life. I tied the artery at and above the wound, and eventually the case did well.

"If, then, compression be tried—and it really appears to me that, in wounds of the brachial artery from bleeding, we are bound to try it before resorting to an operation—the bandaging of the limb seems essential as diminishing the arterial, and, if properly used, as assisting the venous circulation, and thus preventing œdema."—*Lond. Med. Gaz.* May, 1840.

OPHTHALMOLOGY.

56. *On the Operation for Strabismus.* By Professor DIEFFENBACH.—Since my first communication on this operation it has had such a general reception and has acquired such an importance as I did not at that time anticipate. Upwards of 300 cases have been operated on by me within a few months, and both in Berlin and in other places my proceeding has been frequently imitated. I propose to give here a short general view of the results of my observations.

The youngest individuals in whom I have undertaken the division of the shortened muscle of the eye were five years old; the oldest were upwards of forty.

Sometimes one, sometimes both eyes squinted, and the operation had generally the same favorable result in both cases. When both eyes were affected I either operated first on that which squinted most, and when that was quite well on the other, or else on both at the same time.

Squinting inwards, from shortening of the rectus internus, was by far most frequent. Sometimes the trochlearis muscle was also shortened, so that it was necessary to divide it as well as the rectus. In the whole number of those I operated on there were only a few who squinted outwards, and still fewer in whom the eye was directed upwards or upwards and inwards. I found no eyes at all that squinted downwards.

Strabismus upwards was sometimes complicated with blepharoptosis. The division of the rectus superior not only cured the squinting, but the ptosis gradually diminished after it.

Strabismus outwards or inwards was often complicated with nystagmus bulbi. After the division of the external or internal rectus not only did the squinting cease but in general the nystagmus also. In other cases, however, the latter was persistent, and did not decrease till after the division of the rectus superior, or obliquus superior, or rectus externus.

When cataract and strabismus coexisted, the operations for both were done at the same time, and the result was in every case favorable to both.

In most of the patients the strabismus had commenced in very early childhood after ophthalmia neonatorum, scrofulous inflammation of the eyes with ulcers on the cornea, or after acute exanthemata, &c. In many there were cicatrices on the cornea or cataracta centralis. In cases of the former kind, in which hitherto artificial pupils would have been made, the operation was attended by success and considerable improvement of the sight.

All those who had strabismus of only one eye saw more weakly with it than with the other; in those who squinted with both eyes that which was turned least was usually the stronger. The weakness of the one eye had been observed by only a few of the patients; they had naturally looked only with the better eye and the other had been unemployed. The operation completely cured the weakness of sight; some who had actually amaurotic amblyopia could see clearly directly after it was performed.

Some of the patients previous to the operation often saw double; this defect continued for some time after it and then gradually ceased. Some others who had never seen double before did so immediately after the operation. These had been in the habit of looking only with their strong eye while the other had been unused. The improved position of the latter compelled it to see, but the double vision was subsequently lost.

Some who were operated on did not see so well immediately after as before the operation; but after some exercise this weakness of vision ceased and they could then see quite clearly. The cause of this was that when the eye was put in its normal position a point of the retina which was before unexercised was now brought into play and required some practice before it could fully discharge its function.

Operation.—That for strabismus convergens is here taken as the type. The operator always stands on the right side of the patient whether he be operating on the right or on the left eye. The patient sits on a stool, and an assistant standing behind him draws up the upper eyelid with a Pellier's hook. A second assistant draws down the lower eyelid with a double hook which is set in a handle and of which the teeth are connected by a transverse piece. He kneels down before the patient so as not to be in the way.

The operator then puts a fine hook into the conjunctiva at the inner angle of the eye just where it is passing from the palpebræ to the bulb, passes it superficially through it, and gives it to a third assistant who stands on the left side of the patient. The operator next passes a second hook in the same way through the conjunctiva about a line and a half from the first. He and his assistant then both at the same time draw their hooks a little up, so as to raise a fold of the conjunctiva, and at the same time pull the bulb somewhat outwards. The fold is then divided with a pair of curved eye-scissors; and this cut usually at once exposes the tendon and the anterior part of the muscle. A couple of cuts with the scissors then expose the outer surface of the muscle; a rather blunt hook is passed under its tendon, and the two sharp hooks that held the conjunctiva are now removed; the eye is held completely in the power of the blunt hook, and is to be drawn by it from out the internal angle of the orbit. A flat probe is then pushed under the muscle; and the loose connection by cellular tissue between it and the eye is broken up. The division of the muscle is made by the scissors already mentioned, either, first, through the tendon in front of the hook; or, second, behind the hook at the beginning of the muscular substance; or, third, some lines deeper back.

When the tendon is divided nothing of it remains on the eye, and the muscle commonly retracts a line backwards. When the muscle itself is divided at its anterior part or further back, its posterior portion retracts, and the anterior, which remains connected with the bulb, turns forwards like a loose flap, which according to circumstances, may be removed by the scissors or pushed back into the wound if it is thought desirable that it should unite again with the posterior portion.

In practised hands the whole operation seldom lasts more than a minute; and it is done almost without pain. When finished the eye is cleaned with cold water and a soft sponge. The after-treatment consists of cold lotions, and very great abstinence from food and strong drinks. The patient should be kept in a darkened room. In most cases the wound heals very quickly, and after a few weeks no traces of the operation remain, and the eye stands in its normal position.

The operation for internal strabismus is by far the most easy; the division of the obliquus superior for squinting upwards and inwards is more difficult; that of the rectus externus for strabismus divergens is more difficult still; and the most difficult of all is the division of the rectus superior for squinting upwards. With respect to the manipulations of these operations they are just the same as those for strabismus convergens.

Remarks on the Operation.—The fixing of the upper and lower eyelids with the elevator and the hook so as to expose the whole of the anterior surface of the globe is indispensable, for neither the will of the patient nor the separation of the lids by the finger can do this effectually.

The fixing of the globe can be accomplished only by fine hooks carried superficially through the conjunctiva; the seizing and elevation of the fold of conjunctiva by forceps sounds more gentle than to do it with a sharp hook, but it is in reality far more painful, more injurious, and more insecure; the fold raised up by the forceps easily tears or slips from their grasp, and if the forceps are made with hooks they wound as well as pinch the membrane. Two hooks must be employed to make the fold tense enough.

The great number of operations that I have performed has given me opportunity of observing the phenomena that ensue subsequently to them, and their after consequences. The question here is only of internal strabismus, but any surgeon will easily supply the necessary modifications for the operations in the other varieties. In the first case the eye after the division of the muscle goes into its normal position. In the second it remains in some degree squinting. In the third it turns outwards.

In my first operations the position of the eye after the division of the muscle was left to chance, but I gradually succeeded in getting it into my own power to determine it. If there be the slightest degree of convergent strabismus, only a very small opening should be made in the conjunctiva, and the tendon only divided close to the eye without separating the muscle from the globe. In this case the eye at first almost maintains its previous position, but after some weeks it becomes straight. If the conjunctiva be more extensively divided, and if the under surface of the muscle be separated from the globe with a probe and then cut across, the squinting is at once nearly or completely removed. If the conjunctiva be divided over a greater arc and towards the back of the globe, if the cellular tissue be extensively separated and the muscle be detached far back and divided at its middle, then the eye, even in cases in which the whole cornea was before hidden in the internal angle, stands quite straight after the operation.

Hundreds of those whom I have cured have been seen by our own and by foreign medical men, and it was often impossible to distinguish the eye that had squinted from the other.

In some who still squinted slightly after the operation the position of the eye was made perfectly normal by tying up the sound eye and rolling the globe forcibly outwards so as to stretch the newly-formed uniting substance. In others of those whom I first operated on, in whom I had not adopted this after measure, I repeated the operation; and I found that in fourteen days after its first division the muscle was again intimately united with the globe, and that with the exception of a slight thickening and induration of this part there was no indication of a previous operation.

Immediately after the operation the eye can be moved inwards by the superior oblique, and at a later period by the divided muscle which has again united with the globe. In several persons in whom the muscle was divided deeper in the orbit the eye turned outwards some weeks after the operation, so that there was actually an external strabismus. If the divergence was but slight it was often sufficient to snip (*betupfen*) the conjunctiva at the inner angle, so as by the shortening of the membrane that was thus produced, to bring the eye into the middle. But if the divergence was greater I then divided the external rectus and the eye became straight again, especially when I at the same time removed a fold of conjunctiva from the internal angle, for the cicatrix that then followed tended to draw the globe inwards. If the eye, notwithstanding the division of the external rectus, still remained turned outwards, I then, after dividing and separating that muscle, tied a thread as fine as a hair upon its tendon, and with this pulled the eye forcibly inwards. The end of the thread was then drawn tightly across the bridge of the nose and fastened to a piece of good adhesive plaster, which was stuck upon the opposite side. The result for the most part surpassed my expectations.—*British and Foreign Med. Rev.*, October, 1840, from *Casper's Wochenschrift*, July 4, 1840.

57. *On the Cure of Strabismus.*—Dr. A. von Ammon, in a memoir on this subject in the *Monatsschrift für Medicin*, &c., June, 1840, very justly remarks, that a principal point is the determination of the indications for the operation; and I think it the more important, because the whole history of the affection, notwithstanding the works of many excellent physiologists, is extremely obscure and uncertain. Nor could this be otherwise when the anormal position of the eye is in different cases so varied, and so often the consequence of diseased conditions of the brain, the abdominal nervous system, and of the globe itself. Here is a wide range for the production of the disease independently of the cases which are produced by diseases of the orbit. No rational physician will expect to cure such a strabismus by myotomy; and the operation can be applicable only when the malposition of the eye is primarily dependent on the muscle, *i. e.*, when there is a shortening of one of the muscles of the eye, which holds the eye to one side and limits its motions towards the other; but even here more than one condition must be laid down.

But unfortunately the necessary basis of the operation, pathological investigation, is at present absolutely and entirely deficient, no one has yet clearly convinced himself on the dead body that a shortened state of the muscle exists in squinting. The operation, however, may itself be made the means of investigating the nature of the disease; and here again, as has been the case with club-foot and wry-neck, surgery may be made the assistant of pathology.

With regard to the true orthopædics of the eye, *i. e.*, its acquiring the right position after the operation, this consists in the constant endeavour and active exertion of the patient, to give his eye the proper direction. A club-foot or a wry-neck would just as soon return to its right position after division of the tendons without assistance as a squinting eye will. A good method of insuring success is to tie up the sound eye; the eye that has been operated on then always moves to the centre of the orbit, and the longer it is kept there the more likely it is to remain. In few cases will this or some similar measure be unnecessary.

Dr. A. also suggests the propriety of endeavouring to make a subcutaneous or rather a subconjunctival division of the muscle, which he believes would avoid all the inconveniences to which the present method is subject. He has performed it on the dead subject and on animals; and has no doubt it may be applied to actual cases of strabismus.—*British and Foreign Med. Rev.*, October, 1840.

58. *The Causes and Treatment of Strabismus.—Summary of* 76 *Operations by Mr. Liston.* By W. R. Ancram.—The causes of contraction of the muscles of the orbit appear in several instances to be similar to those which produce shortening of other muscles of the body, and induce deformity in the extremities, as in club-foot, contraction of the ham-string muscles, &c., being dependent on direct or indirect injury or irritation of the nervous system. Under this head may be placed twenty-one of the cases which have been operated on; three being produced by direct injury to the brain, thirteen by the convulsions to which children are liable in early life, and nine by the irritation of the diseases of early childhood, small-pox, measles, and scarlatina. Habit is another rather frequent cause; the eye has been affected by some disease; in the anxiety to avoid the

light it has been turned inwards, and permanent strabismus has been the consequence; or a shade has been worn over the eye, the light has been admitted only at the inner angle, and to this point the eye has been constantly directed: ten patients date their deformity from this occurrence. Only four persons have presented themselves who suffered, from their attempts to imitate their squinting companions, by permanent strabismus. Violent exertion, as in hooping-cough, occasioned the disease in five patients; and the action of the muscles of the eye, in looking suddenly at some object, caused a permanent contraction in seven others. Four cases were occasioned by falls. The relative proportion of congenital strabismus is small. I have found only eight who say they were born with the deformity, and in four cases I think that was rather doubtful. From my inquiries into the causes of strabismus, I should say that a far greater number of cases was occasioned by spasmodic contraction of the internal rectus, than by paralysis of the external straight muscle. In a few cases I omitted to inquire the cause of the deformity.

The contraction of the recti muscles varies in different individuals, from the slightest cast, with perfect power of motion, to almost complete immobility and partial concealment of the cornea in the inner angle of the eye. The cornea is most generally drawn simply inwards; in some cases downwards as well as inwards, more rarely upwards and inwards; of course, by the combined action of two muscles. Two patients have also presented themselves where the eye was drawn directly outwards, evidently by a contraction of the external rectus. Both those individuals have been prevented by circumstances from submitting to the division of the abductor as yet; but it is proposed to perform the operation in the course of a few weeks. In a third case the external rectus has been divided, with the same success that attends the more common operation: it presented no greater difficulties than the division of the internal muscle. A most general effect of these changes is diminished power of sight, and this diminution increases in the ratio of the withdrawal and fixation of the cornea from the axis of vision.

The causes which produce strabismus being usually the diseases of early childhood, that is the age at which the affection most commonly comes on. In the greater number of cases the disease has begun previously to the third year, and after that time the liability to the affection appears to decrease with the age. After puberty it is exceedingly rare. Of the fifty-three cases I have examined, one only occurred at the age of fifteen, and one at twenty-five; in the latter case, the strabismus was occasioned by direct injury to the head. As far as I can judge, both sexes are equally liable to this deformity; forty females and thirty-six males having submitted to the operation. The disease does not appear to attack one eye in preference to the other, nearly an equal number of right and left eyes having been operated upon. One case has been treated where both eyes were affected. Age is no bar to the performance or success of the operation. Patients of all ages, from four to sixty-two, have been treated for this affection. A contracted internal rectus, of sixty years' standing, is the most confirmed case in which I have seen this operation performed, it succeeded perfectly. In very young children it would hardly be advisable to attempt the operation when the strabismus was only of few months' duration. The displacement of the eye might depend on some disease of the brain or intestinal canal, which, by attention to the general health, might be removed, and the squint cured without resort to the more violent remedy of division of the muscle.

With respect to the operation, the safest way to secure its complete performance, is to dissect, perfectly clean, the internal part of the ball of the eye, for the slightest fibre of the internal muscle that remains undivided will prevent eventual success. In some instances, after the internal rectus has been cut across, the patient possesses the power of turning the eye a little inwards and downwards; this arises from contraction of the inner border of the inferior rectus. Mr. Liston is in the habit of partially or completely dividing this muscle in all these cases, and this has been done in about ten instances. The only and best criterion of the completion of the operation, is the total inability of the patient to move the cornea towards the inner canthus from the centre of the orbit. If this exist, there is little fear of any return of the distortion of the eye; and to effect this purpose, it will sometimes be absolutely necessary to divide the inner border of the inferior rectus. In four instances the operation has not been perfectly successful; these were all early cases, where, after the division of the internal muscle, the patient still possessed the power of moving the eye somewhat inwards, and before experience had shown the necessity of the division of the depressor. Three of these cases have submitted to a second operation; in all, the inferior rectus has been divided, and the cure is perfect. The fourth, a boy of thirteen years old, is fearful to submit to a second attempt; the eye is drawn downwards as well as inwards, caused, most probably, by contraction of the inferior rectus.

To insure the effect of the operation, the scissors and forceps certainly appear the most effectual instruments; and either for the clear dissection of the inner side of the eyeball, or for division of part of the inferior muscle, they are much to be preferred. By using these, the operator will avoid the danger of doing too little or too much; he will, on the one hand, make certain of cutting all the tendinous fibres which bind the eye in its unnatural position, and he will run no chance of wounding the sclerotic coat, and evacuating the humours of the eye, and thus effectually destroying vision. Ineffectual attempts to divide the internal rectus are common-enough occurrences; and cases have presented themselves where it has been necessary to resort to a second operation. The accident of destroying the organ has also happened, and is not unlikely to occur in the hands of those who go rashly and unskilfully to work.

Although such severe injury is done to the coverings of the eye, it is a rare circumstance to see any inflammation follow the operation. Only five cases have presented any such occurrence; and in all it was so slight, that the application of a few leeches to the inner angle of the eye soon relieved all the unfavourable symptoms.

A slight ecchymosis occurs under the conjunctiva, and may continue for some weeks, even after that membrane is entirely healed. In two or three cases a small abscess under the conjunctiva has formed, always of very little importance; it has discharged itself in a few days, and produced no inconvenience. A little caruncle, or large-sized granulation, sometimes springs from the conjunctiva, near the inner canthus; this may be snipped off if of large size, or its growth subdued by the application of sulphate of copper.

The restoration of the perfection of vision is one of the greatest recommendations of this beautiful little operation, and this effect has been most striking in several instances. In one very complete contraction of the internal rectus, the eye seemed to have been perfectly disused, and incapable of estimating the distance of objects. This patient, when he shut the perfect eye, presented many of the phenomena of a person restored to sight by the operation for congenital cataract; and it was most interesting to remark the daily improvement in his sight. As the two eyes begin to correspond, both in acuteness of vision as well as uniform motion, some diplopia is occasionally complained of.

The first operations which were performed by Mr. Liston, took place in the early part of May. I have had an opportunity of examining lately some of these cases, and I find that the eyes remain perfectly straight; there appears no reason, therefore, to expect that the other cases will not succeed; and this enables me to say, that out of seventy-four cases one only has been unsuccessful, and this in the person of the young boy above alluded to.—*Lancet*, July 18, 1840.

MIDWIFERY.

59. *On the oblique contraction of the Pelvis.*—Dr. NAEGLE has lately called attention to a particular form of contraction of the pelvis which he says has never before been pointed out, and which, nevertheless, is of frequent occurrence; it

is the oblique contraction, consisting of "a complete anchylosis of one of the sacro-iliac symphyses, with imperfect development of one half of the sacrum, contraction of the anterior sacral foramina of that side, and diminished width of the os coccygis and ischiatic notch." In consequence of this disposition, the pelvis is narrowed obliquely, that is to say, in the direction of the diameter crossing that which extends from the points of anchylosis to the acetabulum of the opposite side, while the latter diameter on the contrary is not lessened, and, when the deformity is considerable, even offers more space than in the normal state.

Dr. Nagelé first met with this faulty conformation in 1803. Two women, the subjects of these observations, had only been delivered after much trouble; in one the forceps had been applied with very great difficulty, in the other perforation of the cranium had to be resorted to; both sunk under the effects of their confinements. The author saw then only the anatomical preparations; but, in 1828, he fell in with a woman who presented a remarkable example of it. She was a young girl, large and apparently well formed. The callipers gave seven full inches antero-posteriorly; the sacro-vertebral angle could not be reached with one or even two fingers. Her labour lasted three days before the head had descended sufficiently to warrant the application of the forceps. The termination of the accouchement, by means of this instrument, presented unexpected difficulties, and required so much exertion that they afterwards regretted not having practised perforation of the cranium. Five days after, the woman died of puerperal fever. At the autopsy was found the deformity described by Dr. Nagelé as oblique contraction.

His attention being roused by these facts, M. Nagelé caused researches to be made in the anatomical museums, and learned with surprise that this defect of conformation, which had until then passed unperceived, was quite frequent, for in the course of years a pretty large number of similar pelves have been encountered.—*Journ. de Méd. et de Chir. Prat.* May, 1840.

60. *On Convulsions during Pregnancy and Delivery.*—The following general conclusions close a very able memoir on the above subject from the pen of one of the most experienced accoucheurs in Paris, M. Capuron.

1. Convulsions occur much more frequently during a delivery at the full period than during a miscarriage—doubtless, from the greater severity of the pains and the consequent greater disturbance of the circulatory and nervous systems. Indeed it is truly astonishing that such protracted suffering as almost always accompanies a first labour does not in every instance induce some convulsive attack.

2. The majority of the women, who are seized with convulsions during pregnancy or labour, are of a sanguineous and plethoric constitution, and usually of an irritable and highly nervous temperament.

3. The attack is often preceded by some precursory symptoms, such as headache, confusion, noises in the ear, twitches of the tendons of the fingers or toes, or of the muscles of the face, and a tendency to bewilderment and forgetfulness. The patient is usually much depressed in her spirits, and very apprehensive of the result of her labour.

Perhaps, however, generally the convulsions come on unexpectedly and without any premonitions.

4. The convulsions, after lasting for a longer or shorter period of time, usually terminate in deep somnolence, during which the respiration is heavy and more or less stertorous, and the pulse is full and large, such as is commonly felt in sanguineous apoplexy: occasionally a partial tetanic contraction of the jaws continues for a considerable time after the abatement of the general spasms.

5. From what I have observed, I am inclined to be of opinion that an attack of convulsions during a premature labour is on the whole more dangerous than a similar attack if the labour should be at the full period of gestation.

We might expect that this should be the case, when we consider that the cervix uteri is generally harder, less pliant, and more resisting, if labour happens to come on in the seventh or eighth month of pregnancy.

6. According to the results of my experience, local and general bloodletting and the use of warm relaxing baths are the most powerful means both to prevent and to arrest the attacks of puerperal convulsions. The blood-letting relieves the congested vessels of the head, and probably also the sanguineous accumulation in the uterus, and the warm bath takes off the spasmodic state of this organ and of every other part of the body, by inducing a derivative action towards the surface. As auxiliary means of occasional utility, the extract of belladonna rubbed on the cervix uteri, and some of the milder preparations of opium given externally, may be mentioned with praise.*

7. If we should find on examination that the cervix uteri forms a rigid band around the head or neck of the child, and that the labour-pains make little or no impression upon it, even after blood-letting and other relaxing means have been used, we should not hesitate to divide the constricting portion at one or two places of its circumference with a bistoury. In all such cases, it becomes the accoucheur to ascertain the state of the urinary bladder; as it has been found, in more than one instance, that over distension of this viscus has powerfully predisposed to, if it has not actually caused, the occurrence of convulsions during accouchement.

If the head of the child be within reach of the forceps, we should never hesitate at once to finish the labour by extraction. But if this be impracticable, and the convulsions still continue, recourse must be had without delay to the use of the perforator and crotchet.—*Med. Chirurg. Rev.* July, 1840, from *L'Experience.*

61. *Remarkable Cases of Placentitis;* by M. Ghersi.—*Case* 1. *Gangrene of the Placenta.*—F. M., ætat. 26, slender, of a sanguine temperament, was subject to gastro-enteric irritations which at times deranged the functions of the uterus. At the age of 24 she married; two months after she had metrorrhagia which lasted two days, together with pain in the kidneys, succeeded by an expulsion of a fœtus of forty days. The following year she again becomes pregnant, and continues well until the fourth month, (Feb. 25, 1839,) when she was taken with pains in the loins and subpubic region, and soon after with metrorrhagia. Six days elapsed without any remedies being employed except the application of a plaster to the loins, at the recommendation of a midwife. The symptoms becoming aggravated, Dr. Manco was called, and found the following state of things: Dull pain in the head, rather dry tongue, thirst, general lassitude; full and vibrating pulse, dull pain in the pubic region; metrorrhagia of variable intensity at different hours of the day. Bleeding from the arm, rigid diet, acidulous drinks, and absolute rest, were prescribed. The flooding and other symptoms were removed in four days.

Ten days later, (March 17,) the lumbar and pubic pains reappeared and continued for ten days, then increased and caused a renewal of the hæmorrhage. At this juncture M. Ghersi was called in. He took a little blood from the arm, but the flooding considerably increased; blood streamed from the womb just in proportion as it was allowed to flow from the arm. The vein of the latter was closed, and the uterine hæmorrhage abated; but it reappeared at intervals until the evening of the 28th of March.

Then the lumbar and pubic pains grew stronger and stronger, and the flooding still more abundant; compresses wet with cold vinegar and water and laid over the hypogastric region; but, much to the astonishment of the physician, they appeared to increase the hæmorrhage. Warm drinks were substituted for cold ones. The movements of the fœtus were perceptible to the mother and to the hands of the assistants; auscultation, moreover, demonstrated the beating of the heart. The hæmorrhage is presumed to have arisen from a disease of the placenta. Pills of alum, opium, and catechu were prescribed for several days, but without advantage.

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* M. Capuron omits to mention two of the most powerful remedies in the subjugation of puerperal convulsions—viz. the tartrate of antimony and full doses of camphor. The former may be given in doses of half or of a whole grain, combined with a drachm of syrup of poppies, every quarter of an hour, (after venesection,) until the spasm relaxes. From five to ten grains of camphor with fifteen to twenty drops of tincture of henbane, administered every half hour or so, constitute also a most potent remedy.—*Rev.*

March 31, hæmorrhage becomes more copious; dizziness, ringing in the ears, troubled sight, small and frequent pulse, anxious respiration. These phenomena were attributed to charcoal vapour from a lighted furnace in the patient's chamber. This is remedied; the hæmorrhage continued; abortion appeared imminent. A sinapism was applied between the shoulders; the sanguineous flow ceased for eighteen hours. On examination of the cloths which had received the blood, four or five gangrenous fragments of placenta were recognised among the clots. The flooding reappeared.

April 8, in the evening, the hypogastric and lumbar pains returned, the motions of the fœtus became very frequent, the amniotic liquids were discharged. Canella water was prescribed; pain abated; blister to hypogastrium; syncopy. The tampon was applied. The hæmorrhage sometimes abated and then increased; the patient was very feeble.

April 22. Abortion was accomplished without many pains; the fœtus was still-born, very pale and slender. The placenta not coming away, traction was made upon the cord, but uselessly; it was drawn once more and broke; mother very weak. All was left to nature until the evening of the 24th. Patient is so agitated that no attempt could be made to extract the placenta. In the mean time the uterus had contracted and expelled the placenta, a portion of which was in fragments, with some gangrenous clots of blood.

One-half of the placenta appeared healthy; a portion of the other was entirely destroyed, and this had been expelled by fragments; the remainder was of a dark ash colour, without any appearance of cotyledons, very fetid, pultaceous, and falling into shreds on the slightest traction.

Dr. Ghersi thinks that the gangrene of the placenta might have been prevented if, at the second appearance of the hæmorrhage, ergot had been given.

Case 2. *Placentitis.*—A woman, ætat. 30, robust, mother of three children, pregnant the fourth time, had gone favourably to the fifth month of her pregnancy, when she was attacked with pains in the loins and pubic region, followed by loss of blood. By bleeding the hæmorrhage was arrested for ten days; but it reappeared at the end of this time, again to disappear under the influence of the same means. The same phenomena were reproduced several times at intervals of ten or fifteen days. The woman meanwhile reached the end of her term, and was delivered of a living child who died the fifteenth day.

The placenta offered unequivocal marks of past phlogosis; its posterior face was covered with plastic lymph; this matter amalgamated together and confounded the cotyledons in a third of its breadth.

Case 3. *Placentitis.*—A pregnant woman, ætat. 23, entered the hospital, August 29th, 1839, to be treated for a confirmed syphilis; she complained at the same time of pains in the lumbar and hypogastric regions, and of fever of the intermittent type. Dr. G. diagnosticated a latent suppurating placentitis, and probably an approaching abortion, which took place the 10th of October, in the seventh month of pregnancy. The child was slender, and of a decrepid appearance; it died some days after birth.

When examined the placenta was manifestly ulcerated in two points of its periphery, for the length of an inch and a half and the breadth of an inch. In the centre the placental mass was converted into a lardaceous tissue for the extent of an inch and a half. Several points of suppuration existed at the same time.

"According to these facts, I would have thought with Simpson," says the author, "that the symptoms proper to placentitis are lumbar, pubic, and hypogastric pains, if the two following observations had not come to weaken this belief."

Case 4. *Placental Gangrene; Necropsy.*—A young lady, noble, of very feeble constitution, had had a very painful pregnancy, and a difficult labour. She became pregnant a second time. Towards the seventh month she was threatened with metrorrhagia after a short walk; this show often reappeared, and was accompanied with lumbar pains. The flooding ceased promptly under the influence of a small bleeding from the arm. Towards the eighth month the patient was unexpectedly awakened by an intense but fugitive pain followed by discharge of the liquor amnii. Nothing further occurred until the ninth month, when a hæmorrhage declared itself, which lasted eight days. The lady's life was in great danger; discharge of a very fetid liquid from the vagina; this canal full of clots of blood. Death from excessive hæmorrhage.

At the autopsy, the os uteri was found to be much dilated; the fœtus discoloured, exsanguinous; presentation of the right shoulder; the amniotic membranes ruptured. The placenta excessively fetid; morbidly adherent to the uterus; its substance very thin, or some two-thirds thinner than ordinary; its colour dark as that of wine lees; its resistance so feeble that it tears to pieces at the least traction. In many places, its substance is altogether pultaceous.

Case 5. *Adherence of Placenta to Child's Head.*—In the following case the placentitis went on in an entirely latent manner. A woman, ætat. 39, of lymphatic temperament, mother of seven children, pregnant for the eighth time, experienced after some light pains in the kidneys, and towards the third month, a rupture of the membranes. Two hours afterwards uterine pains and a flow of blood from the vagina manifested themselves; an hour and a half later she was delivered of a fœtus enveloped in its membranes. At the examination the placenta was found to adhere so forcibly to the head of the child that it was impossible to separate them without tearing it. It is incontestible, says, the author, that this adherence to the teguments of the cranium was the consequence of a phlogosis, and that this phlogosis was itself the cause of the abortion. A pretty copious metrorrhagia, which lasted forty days, followed the abortion.

It remains proved, therefore, according to him, that placentitis can sometimes exist latently until the epoch of abortion. In some cases it provokes a sort of diminutive fever of the intermittent type; this is when points of suppuration arise in the substance of the placenta. In general, however, it is always true to say that lumbar and hypogastric pains, and intercurrent floodings, form its principal characters.—*Lancette Française*, July 21, 1840, from *Annali Universali di Medicine*, May and June, 1840.

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62. *Fracture of the Arm of a Child during birth, by the natural efforts of Parturition.* By Dr. Löwenhardt.—The mother in this case was twenty-two years old, and it was her first labour. In consequence of slight malformation of the pelvis it was necessary to assist the delivery by the forceps; by their aid and by the moderately powerful and regular contractions of the uterus, the head had passed through the vulva (the face being turned towards the left side of the mother) when a longer than usual pause between the pains occurred. Presently, however, they returned with considerable force, and the right shoulder, which had before been passing slowly along the perineum, was rapidly expelled; and scarcely had the left shoulder, which was directed upwards and to the right, passed through, when a snap was heard. When the trunk was completely expelled, it was found that the left arm, which lay across the chest, was fractured at the upper third of the humerus. It was put up with paste-splints and a bandage, and union took place.

The author remarks that the case is interesting, in showing that fractures of the upper extremities of new-born children are by no means always produced by awkward manipulation, but under certain circumstances are the effect of the natural process of parturition. That fractures and indentations of the skull may be produced by a projecting promontory, as well as by narrowness of the pelvis, is well known, and the author himself has met with two cases of the kind; but that fractures of the upper extremities may be affected by the act of parturition has not yet, as far as his knowledge extends, been pointed out. In this case the fracture seems to have been produced by the humerus being fixed between two hard bodies, the receding os pubis and the ribs, while the shoulder was being rapidly expelled; and, consequently, a fracture of the lower extremity must be much less likely to occur, because, except in a monstrosity, the leg can never be thus impacted between two hard bodies.—*Brit. and For. Med. Rev.* Oct. 1840, from *Medicin. Zeit.* Mai 6, 1840.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

63. *Insanity in Extenuation of Crime.*—Edward Oxford, a youth of eighteen or nineteen years of age, on the 10th of June, 1840, discharged two pistols in rapid succession at the Queen of England, while riding. He was tried for the crime of high treason, and the result was a verdict of "*guilty, being at the time insane.*" The following are the material facts elicited on the trial.

The prisoner was born at Birmingham; came very young to London; went to school at Lambeth, and served successively as barman in three public houses in London. He then went into lodgings. On the 4th of May, he purchased a pair of pistols and a powder flask. He practised at a shooting gallery in Leicester square; at a second in the Strand, and at a third at the west end of the town. On the third of June, he called on a school companion at Lambeth, of whom he bought half a hundred copper caps, and asked where he could buy bullets and three pennies' worth of gunpowder. This friend directed him where he could purchase bullets, and gave him some gunpowder. On the 9th of June, he showed a loaded pistol, refusing to say what he meant to do with it, but added that he had been practising at a target.

When arrested, he instantly declared that he was the person who had fired. He gave his address, and at his lodgings were found a powder flask, three ounces of powder, a bullet mould, five leaden bullets, and some percussion caps. Some papers of an apparently treasonable nature were also discovered.

For the defence, it was proved that the prisoner's grandfather had been decidedly insane, so much so, as to require a straight waistcoat. The prisoner's mother, also, testified to the insanity of her husband. "Frequently before our marriage, he made attempts on his own life. On one occasion, he was brought in from the street with a razor in his hand. She described her husband's conduct to her as absolutely brutal, cutting her arm with a jug, her head with a pewter pot, and stabbing her with a file; and she added, he used to laugh with satisfaction when he saw her displeased." Another witness had seen the father ride into his own parlor on his horse; and it was also proved that he had attempted to commit suicide with laudanum.

The testimony in favour of the insanity of the prisoner was as follows. His mother stated that "Edward was also eccentric. He pointed a pistol at me the first time he brought pistols to the house. He was particularly fond of fire arms and gunpowder. He used to amuse himself with cannon when a boy. He was once very much burnt by gunpowder. This was eight years ago. His eyebrows were burnt off, and I sat up two nights with him. He screamed terribly all the time. He has a habit of laughing, and I have frequently beat him for it. He laughed hysterically after fits of violent passion. The laugh is involuntary, I have no doubt."

George Sanden had the prisoner under his care for twelve months, and sent him home because he thought that he was out of his senses. The aunt, with whom he lived as barman, and several other persons, spoke to his inconsiderate and continual laughing. His sister also deposed that he had presented pistols at her.

Dr. Hodgdin, Dr. Conolly and Dr. Choune, considered the state of the prisoner's mind as manifestly unsound.

Lord Chief Justice Denman, in summing up, made the following remarks: "It was sought to be proved that there was a hereditary taint of insanity in his family, and that his conduct was odd; that he was at the age at which hereditary insanity developes itself; that the crime itself, and the papers found in the box, were proofs of insanity. With regard to the hereditary insanity, there was no proof of the nature of the insanity under which the grandfather laboured; and it would also be for them to say, whether there was any evidence to show that the grandfather, although a man of very violent temper, was suffering at all from insanity. With regard to the medical evidence, he considered it a most dangerous doctrine to assume the commission of crime as evidence of insanity, and to make every atrocious and extraordinary wickedness its own excuse. Strictly speaking, there never could be any adequate motive to crime, and it would be most dangerous to assume that every person committing a crime without adequate motive was insane, and therefore not accountable for his actions. The object here was to show, that at the time of committing the act he was not able to distinguish right from wrong. The papers might be used on either side. If he really believed that he was a member of a secret society which had no existence, there was a degree of delusion which might almost excuse a person labouring under it from the consequences of any act. But there was a degree of cunning exhibited in the letters, and it was impossible to say under what circumstances they were written. If he committed the crime for the sake of notoriety, he must be held responsible for the consequence of his action. He left the case to the jury."

On their finding, the prisoner was committed to Bethlehem Hospital, one of the public asylums for the insane.

The above narrative is taken from an account of the trial in the London Atlas newspaper, of the 11th of July, 1840. The editor, in expressing his acquiescence with the verdict, observes: "We are only anxious, for the sake of public security, that it should not go forth to the world that a man is emancipated from the laws against murder because his grandfather and his father were violent and disorderly people, who ill-used their wives; and because he himself had an eccentric habit of laughing." T. R. B.

64. *Feigned Disease, by Provocation.*—Mr. Villard, a French writer on diseases of the eye, states that he knows a man, unworthy of the name of a physician, who has made an enormous fortune by producing artificially specks of the cornea in young persons liable to be drawn into the military service.—*British & Foreign Medical Review*, No. 19. T. R. B.

65. *Period of Gestation in Cows.*—Earl Spencer has made this the subject of observation for a number of years, and, in 1839, communicated to the English Agricultural Society, the result. Out of 764 cases, 314 calved before the 284th day, and 310 after the 285th. At 284 days, 66 calved, and at 285, 74 calved. Lord Spencer, therefore, supposes that the probable period of gestation should be considered 284 or 285 days, and not 270, as is stated in some works of authority on Husbandry. The following is a condensed view of his tables.

At 220 days,	1	At 286 days,	60
226	1	287	52
233 to 239 days,	4	288	42
242 to 250	7	289	45
252 to 259	12	290	23
262 to 270	13	291	31
271 to 278	69	292	16
279	32	293	10
280	35	294 to 299	24
281	39	304 to 305	2
282	47	306 to 307	4
283	54	313	1
284	66		
285	74		764

It thus appears "that the shortest period of gestation, when a live calf was produced, was 220 days, and the longest 313 days; but I have not been able (he observes) to rear any calf produced at an earlier period than 242 days. Any calf produced at an earlier period than 260 days must be considered decidedly premature, and any period of gestation exceeding 300 days must also be considered irregular; but in the latter case the health of the produce is not affected."

"There is a prevalent belief among farming men, and I believe farmers, that when the time of gestation of a cow is longer than usual, the produce is generally a male calf. I confess that I did not believe this to be the case, but this table shows that there is some foundatian for the opinion. In order fairly to try this, the cows which calved before the 260th day, and those which calved after the 300th, ought to be omitted as being anomalous cases, as well as the cases in which twins were produced, and it will then appear that, from the cows whose period of gestation did not exceed 286 days, the number of cow calves produced was 233, and the number of bull calves 234; while from those whose period exceeded 286 days, the number of cow calves was only 90, while the number of bull calves was 152."

The twins were as follows:

Twin cow calves, - -	7
Twin bull calves, - -	5
Twin cow and bull calves, -	11
	23

Total product,

Breeding heifers, - - -	354
Bull calves, - - - -	422
Heifers, twin with bulls, (Freemartins,)	11
	787

Journal of the English Agricultural Society, 1839, vol. i, part 2, p. 165.

T. R. B.

66. *Quick with Child.*—Most of my readers are doubtless familiar with the distinction taken in our own law (and which is derived from the English) as to a female being merely *pregnant*, or being *quick with child.* The punishment for attempting or procuring abortion is more severe in the latter case than in the former. The objection of medical jurists to this discrimination is also understood.

In civil cases, it would appear, from the following decision, that this distinction is not to be entertained.

A testator bequeathed the residue of his personal estate to such of his grandchildren *as should be living at his decease*, in equal portions. The testator died June 19, 1809, and Charles L. Hancock, one of his grandchildren, was born March 6, 1810. The court decided that "the distinction between a woman being *pregnant* and being *quick with child*, is applicable mainly, if not exclusively, to criminal cases, and does not apply to cases of descents, devises, and other gifts. In general, a child is to be considered as in *being* from the time of its conception, where it will be for the benefit of such child so to be considered. The time of conception of a child is presumed to be at a period nine months previous to its birth; and where there is no evidence to rebut the presumption, it is conclusive." Charles was therefore declared to be entitled to a share of the property.—*Hall* v. *Hancock*, 15 *Pickering's* (*Massachusetts*) *Reports*, p. 225.

In a recent case, I find a new definition of the term introduced, which is certainly not in accordance with the language of English and Scotch commentators. The defendant (a female) was found guilty of murder. She urged in stay of execution, that she was pregnant. A jury of matrons was empannelled, and they came into court and asked the assistance of a surgeon. The judge (Baron Gurney) granted it; and on his previous examination of the surgeon, he said, "*Quick with child*" is having conceived; "*With quick child*" is when the child has quickened. "Do you understand the distinction?" The surgeon replied that he did, and was then sent to the jury, who shortly after brought in a verdict that the prisoner was not quick with child. *Regina* v. *Wycherley*, *Carrington & Payne's Reports*, vol. viii, p. 262. T. R. B.

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67. *Alleged Rape. Feigned Diseases.*—I am indebted to the kindness of Dr. D. B. Bullen, of Cork, for the narrative of the following case. He was pleased to transmit a copy of it, published in the *Dublin Medical Press*, of March 25, 1840, through my brother, Dr. John B. Beck, of New York.

At the Cork Spring Assizes of 1838, two brothers, of the name of Callaghan, were tried before Sergeant Greene upon a charge of having violated and otherwise abused a woman of the name of Sarah Fleming. The accused were respectable persons.

The prosecutrix testified that she was married, had a child in the house of industry and two others (girls) elsewhere. She had been acting in the capacity of nurse-tender in the North Infirmary, from which place she was returning on the evening previous to the morning of the alleged outrage, when she was accosted on the North Bridge by a man, who told her, among other things, that her sister was coming from Clonmel, and was taken ill on the road, and that he was looking for her. Hearing this, the witness accompanied the man to several places, and he entered a house, from which returning, he said, "She is not there." They walked together until they arrived at Mallow Lane, when the clock having struck twelve, she became alarmed, and said she wished to be at her lodgings. She however remained with him, as it appears, a half an hour, and during all this time his language, as she stated, was proper. A woman now came up, and said, "Is that you, Bill?" to which the man replied, "This is my sister," adding, "this woman (witness) wants to sleep with you;" and she said, "Yes, and welcome." After some further conversation, the clock struck one, when another man came up, and they whispered together. They soon made off, and arriving at a lane near Dominick street, the first man pushed her in, upon which two other men came up, one of them disguised with a cap, which nearly covered his face. She thought of the Callaghans at this time, one of them being lame. Becoming alarmed, she clung round the first man, when Patrick Callaghan knocked her down. Here the prosecutrix described the outrage, which she said was participated in by all three. She swore also, that not only had the prisoners committed the offence charged, but that they had subsequently treated her in a manner the most brutal. They then tied her up to the wall, leaving her exposed; and that in that state she was found in the morning; that she had lost her senses, which did not return to her until she found herself in the infirmary.

The principal facts elicited on her cross-examination were, that she admitted having acted improperly with three different men. The present was the third time she had appeared against the Callaghans in a court of justice; the first time was when she prosecuted Patrick for an assault upon her daughter, a child eleven years old, when he was convicted and sentenced to six months confinement. She had been offered money as an inducement not to prosecute, but she refused it. The next prosecution was for an assault on herself at Mallow lane, when they were acquitted. During the assault she neither screamed nor bawled. She could not do either, as they fastened a rope around her neck, and stuffed her mouth with hay.

Nicholas Duggan deposed, that on the morning in question, between four and five o'clock, on proceeding from his own house, he saw the prosecutrix in the position described in her own evidence; that he met a woman lower down in the lane, whom he begged for God's sake to relieve the prosecutrix from the state in which she was. When released, she whispered the woman to send for Sergeant Robinson.

Constable Robinson described the condition of the prisoner. He had her removed to the infirmary, and took her statement. He then proceeded to arrest the Callaghans, at seven o'clock, but did not obtain admission into their house for half an hour. Patrick appeared pale and frightened. He took them into custody, and gave them in charge to the police. One of the brothers said, "I suppose this is Sarah Fleming again."

The medical testimony is thus given by Dr. Bullen. When this woman was brought to the North Infirmary, on the 22d of September, she continued for sometime in a state of apparent insensibility. Her mouth was stuffed with a quantity of dry grass, and a piece of cord was firmly tied across it in the manner of a gag. On her chest were slight contusions, and the wrists were firmly bound together with pieces of thick whip-cord. On removing her clothes, the neck of a common black bottle fell from between her thighs upon the floor. When questioned after some time, as to the cause of being found in this situation, she told pretty nearly the same story as detailed at the trial, with some particulars which did not appear in her evidence. She said that after each of the three Callaghans had violated her, they forced either a stick or some other hard substance, and afterwards the neck of a common black bottle into the vagina; that they stuffed her mouth with grass and gagged her; that they bound her wrists together, and having tied her clothes above her head, suspended her by the cords from the railing of the window, where the watchman found her. Dr. Howe, under whose care she was placed, made a strict examination of her person a few hours after being brought into the hospital. There was no mark of bruises upon her thighs, nor any appearance of violence about the pudenda. Considerable indentations had been left about the wrists where the strings had been tied, and when a hand was applied to the contusions on her chest, she screamed and appeared to suffer great pain. She expectorated bloody saliva in quantity, and with consummate art developed the several symptoms which may be expected to follow the injuries she pretended to have received.

Dr. Howe distrusted her story from the commencement, but the consistent and collected manner in which she told it, and the extraordinary faculty with which she simulated the appearances of disease, made a strong impression in her favour on the minds of many. It was resolved to seem to place implicit reliance on the truth of every thing she said, and to treat her with the greatest commiseration.

About ten days after her admission into the hospital, a little before the hour of visit, a stream of water was seen flowing from under her bed; on being asked what was the matter, she said "she had lost all power over the bladder, having felt it tore when the Callaghans forced the bottle into her body." Dr. Howe immediately passed a catheter into the urethra, and making an examination, per vaginam, found the parts in a natural and healthy state. Two days after this occurrence, she began again to expectorate bloody saliva, spitting upon the floor so as to attract attention, and complained of severe pain in the chest, the consequence, she said, of the injuries she received on the night of the assault. Her mouth being examined, it was evident that her gums had been scratched, and that the bloody saliva had been produced by sucking them.

She was now taxed with deceit, and accused of having invented a false and horrible tale, with intent to swear away the lives of three innocent men. She listened with an air of calm resignation, and replied with gentleness, "God forgive you, gentlemen; wait a while, and you shall see how you wrong me." That night when it became dark she found her way into the Lock Ward of the infirmary, from which she was turned out by the nurse tender. The evening after, Dr. Bullen (who is a surgeon of the infirmary) paid a late visit to the hospital, and missing Sarah Fleming from her bed, he searched for her, and found her again in the Lock Ward; being asked what she wanted there, she appeared much confused and made an equivocating answer. In a week after, having been reproached as an impostor, and subsequent to her nocturnal visits to the Lock Ward, she requested Dr. Howe to examine her, as she felt some soreness about the vulva. He did so, and found venereal chancres, apparently in the first state of formation. Hearing the character of these sores pronounced, the woman triumphantly exclaimed, "See, gentlemen, how you wronged me innocent woman; as God may judge me, I got this disorder from the Callaghans the night they assailed me." Information of this circumstance was immediately conveyed to the prisoners, who had been confined in prison since the 22d, and they were examined by the late Dr. Evans, who gave a certificate that neither of the three brothers presented the slightest trace of the venereal disease.

As the testimony of Dr. Howe, and the certificates of Drs. Evans and Hevenden, both since dead, showed that no indication of violence to justify the charge of it had been discovered, the prisoners were acquitted. Sarah Fleming was committed to the city jail, upon an indictment for perjury.

In May, immediately following these March assizes, Dr. Bullen took the medical charge of the prisoners in the city jail, for his friend, Dr. Nugent, who had gone to London. He found Sarah Fleming, in the infirmary of the prison, confined to bed, in consequence, as she asserted, of the injuries she had received on the night when assaulted by the Callaghans. When she was informed that she was to be placed under his care, she broke out into the most violent invective and abuse, and said, "that as he had helped to ruin her character in the North Infirmary, he was now come to persecute her to death in the prison." After some days, she appeared really ill, and he succeeded with some difficulty in calming her indignation. She seemed to be suffering under some very severe abdominal disease. There was great swelling and tenderness of the whole belly, but more especially above the pubis. The stomach was extremely irritable, immediately rejecting every thing she swallowed. Her pulse 130, and very small; tongue foul and parched; skin hot and dry. Dr. Bullen asked to see her alvine evacuations, which fortunately had been kept, and found them perfectly natural. On seeing him smile, she said quickly, "You may smile, but look at my urine." The urine was abundant, but heavily loaded with ropy mucus, and deeply tinged with blood. In the bottom of the chamber-pot was a very curious looking sediment, which he found to consist of powdered mortar and ashes. He inquired if she was menstruating, and found she was not; but the nurse-tender told him that there was a discharge from the vagina of an extremely offensive character, and her linen was marked with a muco-purulent discharge. The appearance of the urine was both perplexing and suspicious. On the one hand, the ropy mucus and blood mixed with it, and the tenderness on pressure; and, on the other, the powdered mortar and ashes. Dr. Bullen directed her bed to be placed in the centre of a large room, removed from the walls and fire place. He ordered her to be closely watched, and all her discharges to be carefully removed and put aside for examination. The next day, she was alarmingly ill; the tension and pain of the abdomen had much increased. She could not bear the slightest pressure over the pubis, and the discharge from the vagina was much increased and very offensive. In spite of the most determined resistance on her part, he made an examination per vaginam, and found it completely blocked up with a large solid body, which, with much difficulty, he extracted, and found to be a *large rough paving stone!* The miserable woman turned to him and exclaimed, "God forgive you; that is the stone the Callaghans forced into my body, and the doctors at the infirmary could not make it out."

Mr. Dillon, Demonstrator at the Royal College of Surgeons, Dublin, had accompanied Dr. Bullen, that day, to see the prisoner, and assisted him in removing the stone, which weighed seven ounces. It must have been lodged for some time in the vagina, as it was thickly coated with a white calcareous incrustation and layers of thickened mucus.

For more than a week her life was in imminent danger. High inflammation of the uterus and coats of the bladder, involving the peritoneum, took place, accompanied by deep ulceration and sloughing of the mucous membrane of the vagina; and for some days, the case had every appearance of terminating in recto-vaginal fistula.

The infirmary of this prison opened into a garden, to which the sick prisoners had access, and in this garden were heaps of stones similar to those taken from the prisoner. For the three months during which Sarah Fleming remained under Dr. Bullen's care, she continued perseveringly to simulate various diseases with great perseverance and remarkable fidelity of execution; all evidently with the design to multiply proofs of the injuries received from the Callaghans.

At the ensuing August Assizes, she was tried for perjury, convicted and sentenced to transportation. "Mr. Murphy, governor of the city jail, informed me afterwards, that from the moment of conviction, the demeanour of this woman became completely changed, and that the report of her conduct on the passage to New South Wales was extremely favourable."

Remarkable as is this case for the malignant perseverance of the accuser, and improbable as the occurrence of a similar attempt may seem, yet it should not be forgotten that the lives of the Callaghans might have been forfeited, *had not an immediate examination* been made by Dr. Howe. Not only in Ireland, but I think, in some parts of this country, accusations of rape are increasing. They are very readily preferred, and they depend for proof on the testimony of the accuser alone. Should it not be required that an early examination be made in these cases by a medical practitioner, and in default of a speedy application for that purpose, that the charge be proportionably discredited? T. R. B.

68. *Treatment of Poisoning with Opium, &c.*—In ordinary cases the indications are, first, to endeavour to remove the poison from the stomach. This is attempted by the use of emetics or of the stomach pump. The second is to keep the patient constantly roused. In numerous instances this has been accomplished by dashing cold water over the head and body. Dr. Boisragon advises a modification of this, and adduces several cases of his success. His directions are as follows: after using the preliminary means, place the feet in warm water, and pass a sponge dipped in the same and as hot as the hand can bear it, over the shoulders, chest and back. Let this be immediately followed by a dash of cold water over the face, or by passing a sponge dipped in it over the head and chest. These continued novel or *alternate* impressions on the nervous system may prove, in his opinion, powerful assistants in the recovery of poisoned persons.—*London Medical Gazette*, March 6, 1840. T. R. B.

69. *Action of Albumen on Corrosive Sublimate.*—The change induced by albumen on corrosive sublimate when taken internally, is one of the most interesting problems in chemistry. It is universally considered as an antidote if taken sufficiently early, but how it acts seems at present to be a matter in doubt. I believe Dr. Bostock was one of the first who noticed the action of these bodies on each other, and he states explicitly, that even when heat was applied, the precipitate is a compound of albumen and corrosive sublimate. (*Nicholson's Journal*, vol. xiv, p. 142.) Dr. John Davy, to whom I am indebted for this reference, advocates a similar opinion in his Physiological and Anatomical Researches. According to his experiments, no muriatic acid was disengaged or produced, nor could he induce a union of albumen with either the protoxide or peroxide of mercury. It has, however, been generally credited on the authority of Orfila, that a decomposition takes place, and that the resulting compound consists of albumen, muriatic acid and calomel. He grants, however, in the third edition of his Leçons, (vol. i, p. 301,) that the resulting calomel is never applied in the form of powder to the membranes of the alimentary canal, nor has it the physical properties of calomel, since it is intimately combined with the substance which has been the cause of its formation, and thus constitutes a ternary chemical compound. I have also mentioned, in another place, the cases of Olivier and Barruel, who, in persons poisoned with corrosive sublimate and to whom milk and albumen had been administered as antidotes, could detect no calomel; but the tests indicated the presence of corrosive sublimate, a portion of which was probably still undecomposed.

Dr. Turner (Chemistry, 5th edit., p. 937,) also states, that Rose, in a late analysis, proved the resulting precipitate to consist of oxide of mercury and albumen.

The latest experimenter is Lassaigne. He asserts, from a series of observations, that in the action of albumen on metallic salts, *this principle unites directly with these compounds without producing any decomposition.* It forms compounds with them, which are insoluble in water, when these bodies are in certain proportions, but susceptible of solution when the albumen or the metallic salt is in excess. And these compounds he denominates *albuminates.* (*American Journal of Pharmacy*, vol. xii, p. 170, from the *Journal de Chimie Médicale.*)

We have reason to fear, from these results, that the value of albumen as a *chemical* antidote, will be somewhat impaired. Still its use should not by any means be omitted, but it should be administered as early as possible and in large quantities. T. R. B.

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70. *On the Conversion of Calomel into Corrosive Sublimate.* By M. Miahle.—A physician had prescribed to a child a few powders, containing in each five grains of the muriate of ammonia, five grains of sugar, and half a grain of calomel. After taking a few of these the child died, with all the symptoms of poisoning by corrosive sublimate; and the apothecary was charged with the death of the child, on the supposition that he had substituted corrosive sublimate for the calomel. Experiments were instituted to ascertain whether the calomel could have been decomposed by the ammoniacal salt; and it was satisfactorily proved by M. Peten-Koffer, that a porton at least was converted into corrosive sublimate. A celebrated French professor of chemistry, however, denied that such an action took place; and M. Miahle repeated with great care the experiments, and arrived at the following important conclusions.

1. The proto-chloride of mercury (calomel,) when mixed with muriate of ammonia, or the chlorides of sodium or potassium, and distilled water, is partly converted into the deuto-chloride of mercury (corrosive sublimate,) and partly into metallic mercury. This decomposition takes place at the temperature of the human body, and even at ordinary temperatures, in the course of a few instants. In order to be convinced of the truth of this, it is only necessary to have in the mouth for a few minutes a small quantity of calomel; a pretty intense mercurial taste is soon developed, due to the mutual reaction of the mercurial chloride, and the alkaline chlorides contained in the saliva.

2. It is to the conversion of calomel into corrosive sublimate and metallic mercury, when acted upon by the hydrochloric acid or hydrochlorates, or ammoniacal salts which exist in the digestive tube, that we must attribute the pathological phenomena of mercurial salivation, when calomel has been administered internally. What proves that such is really the case, is the fact, that when calomel does not purge, but is tolerated by the digestive organs, it excites an abnormal secretion of saliva and this on account of the larger quantity of sublimate which is formed.

3. As the quantity of sublimate formed within the body depends on the quantity of alkaline chlorides met with in the intestinal canal, those who habitually use large quantities of salt, all other things being equal, ought to be more easily salivated than others.

4. The antisyphilitic properties of calomel are probably due entirely to the corrosive sublimate and metallic mercury into which it is converted. Without doubt its anthelmintic virtues are owing to the same cause; the two substances into which it is converted acting as a poison on the intestinal worms.

5. What has been said of calomel is equally applicable to the proto-ioduret of mercury; it being, in the same circumstances, converted into the deuto-ioduret. —*Edinburg Med. and Surg. Journ.* July, 1840, from *Journal de Pharmacie*, February, 1840. T. R. B.

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71. *Case of Poisoning by Colchicum Seeds.* By Dr. Neubrandt.—A man, 52 years of age, took by mistake, on the evening of the 18th February, a decoction of the seeds of colchicum, made with a table spoonful of the seeds to a pound and a-half of water. During the night he vomited, and passed more than fifteen stools. He was seen by Dr. Neubrandt next morning, but was not then complaining much. The vomiting and purging were less frequent, and though he

felt weak, he had no pain, and could sit up. The abdomen, though not distended, contracted spasmodically when touched; the pulse was small and rather quick; the stools had a very fetid colour, and contained a quantity of whitish looking membranes. He was first ordered tepid water and melted butter, but this excited the vomiting and purging of new. Strong infusion of coffee, and also infusion of marsh mallows with lemon juice were next prescribed.

Next morning, the 20th, he presented the following symptoms; his face was pale, the eyes sunk in the orbits, and the pupils very much dilated, the respiration was hurried, and he groaned much. The tongue was covered with a whitish fur, and was with great difficulty protruded. The region of the stomach was painful. His breath, face, and extremities, were cold; the pulse very quick, and scarcely to be felt. The purging was more constant, and the stools contained matters of a clear blue colour in considerable quantity. Although he gave distinct answers to questions which were put to him, his intellectual faculties seemed to be confused. He died at ten o'clock. The only symptoms of any portion of the poison having been absorbed were the continuance of the vomiting and purging.

The body was examined twenty-three hours after death. The pupils of the eyes were very much dilated, the eyes were much sunk, and the mouth spasmodically closed. There was remarkable rigidity of all the members and muscles. The abdomen, scarcely more swollen than during life, was of extraordinary rigidity, and was covered with peculiar looking spots, which were especially numerous in the region of the stomach, and on the sides of the abdomen; these spots were of a violet and greenish blue colour, presented the appearance of rays, and were not circumscribed. The muscles were of a deep blue colour, as if they had been dried in the air. The trachea was inflamed at its bifurcation. The lungs were collapsed, pale, and soft to the touch, but not diseased. The heart was turgid with coagulated blood, and covered with spots of black, violet, and brown colour. The œsophagus was of a natural appearance till towards the cardia. The stomach was of a light violet colour, its cardiac orifice being of a deep violet. The veins of both stomach and intestines were much distended by very dark blood. The liver had a violet hue over its concave surface; and the gall bladder was much distended with green bile. A few red and brown mottlings were observed on the surface of the intestines, but otherwise they presented nothing unnatural. The other organs of the body appeared to be healthy. —*Ibid.*, from *Mediciniaches Correspondenz-blatt*, 1840. T. R. B.

72. *Rupture of the Spleen.*—Dr. Sotis relates, in *Il Filiatre Sebezio*, for February, 1840, four cases of this accident. The first case occurred in a woman who received a kick in the left hypochondrium and immediately expired. The spleen was found, on examination, separated into two parts as if cut with a sharp instrument, and there was a large effusion of blood in the abdominal cavity.

The second case resulted from a blow with a stone on the left hypochondrium, which was followed by almost instantaneous death. All the organs were found healthy except the spleen, which was largely ruptured, and the abdominal cavity contained a quantity of blood.

The third case occurred in a boy 18 years of age, who fell from a height of about 20 feet. He remained senseless, and died in a few hours. On autopsy, the spleen was found divided transversely into two parts; a great quantity of blood was effused in the abdomen. All the other organs were healthy.

The fourth case was that of a boy 15 years of age, who received in a quarrel a blow from a large stone, thrown from a distance, on his left hypochondrium. He instantly fell senseless and never revived. The spleen was found split through the longitudinal fossa, and each of these portions had two deep transverse fissures, so that the spleen had the appearance of having been cut into six portions at its concave surface. There was also much sanguineous effusion into the abdominal cavity.

In all the cases, death, hæmorrhage, and the size of the divided vessels, suffice to explain the rapidity with which it occurred. However, Dr. Sotis attributes in part the gravity of this injury to the lesion of splenic plexus an important division of the solar plexus. Whence, independently of the debility instantaneously resulting from the hæmorrhage, there was a destruction of nervous power, the effect of which is still more profound and instantaneous.—*Gaz. Méd. de Paris*, May 9, 1840.

MEDICAL STATISTICS.

73. *Results of Amputations.*—Dr. Lawrie, in a paper communicated to Med. Sect. B. A. for advancement of Science, gave tables exhibiting the results of 276 amputations, which took place in the infirmary of Glasgow, during several years. The cases were classed from the sex, the limb operated on, and from the causes rendering the amputation necessary, whether from disease previously existing or from accident. Some of those results were as follows: of the 276 cases, 216 were males, of whom 86 died: 60 were females, of whom 14 died; 153 were for previous disease, of whom 35 died. In operations at the shoulder the deaths were equal to the recoveries; of the arm, the deaths to recoveries were as 3 : 14; in the leg, as 1 : 2; in the wrist, at one period, as 1: 29; in another period as 8 : 22.

The question of primary or secondary amputation in cases of wounds was discussed, and the preference given the secondary. Immediate dressing was approved of. The impropriety of operating during the shock was insisted on. The cause of death was examined, and found frequently to exist in the viscera, particularly in the lungs.—*Athenæum.*

74. *On the Comparative Frequency of Hernia according to the Sex and Age, and also relative to the Population.*—In an interesting article on this subject, in the "*Annales d'Hygiene Publique,*" July, 1840, M. J. F. Malgaigne, after enumerating the difficulties attending an inqniry of this kind, compares the results which have been published with regard to the comparative frequency of hernia, with those which have come under his own observation.

1. *Comparative frequency of hernia in the two sexes.* According to Louis at Saltpetrie, an hospital for women, 3 out of every 100 were affected with hernia; whilst at Bicetre, a hospital for men, 6 of every 100 had hernia; and at the Hospital des Invalides, the proportion was a fraction greater. This gave a proportion of 2 men for every 1 woman afflicted with that disease. At Amsterdam, Jean Monnikoff found the proportion of men greater, being nearly 3 males to 1 female with hernia. M. Mathey says, that, at Antwerp, the proportion is as 4 men to 1 woman, and Mr. Lawrence that, at London, the proportion is so great as 6 to 1.

M. Malgaigne, in order to arrive at something like an approach to the truth, collected carefully the number of the cases, both male and female, who applied for bandages or pessaries during the years 1836 and 1837, and also part of 1835, at the Bureau Central des Hopitaux. He found that during October and November, 1835, 435 cases of hernia, or prolapsus of the vagina, had occurred; and that of this number 335 were males, and 100 females; giving a proportion of 3½ males to 1 female. But if those who applied for prolapsus of the vagina alone be cut off, 410 cases of true hernia still remained—of which number 335 were males, and 75 females; or 4½ males to 1 female.

For the year 1836 the proportional number of those afflicted with hernia were 2903 males, and 594 females, or very nearly 4 males to 1 female. This does not include the cases of prolapsus of the vagina or uterus.

For the year 1837 the proportion was very nearly the same, viz. 4 males to 1 female, the numbers being 1884 males and 489 females. From these facts he draws the conclusion, that in Paris, amongst the lower classes, four males are afflicted with hernia for every female so situated.

2. *The influence of age on the occurrence of hernia.* The results will be most easily understood by consulting the following table drawn up by M. Malgaigne.

	1836.			1837.		
Ages.	Males.	Females.	Total.	Males.	Females.	Total.
From birth to 1 year	48	7	55	30	8	38
1 to 2 years	16	7	23	29	7	36
2 years .	18	4	22	14	2	18
3 years .	11	4	15	9	1	10
4 years .	9	0	9	9	4	13
5 to 13 .	53	12	65	45	6	51
13 to 20 .	83	8	91	76	7	83
20 to 28 .	118	17	135	108	23	131
28 to 30 .	47	9	56	33	12	45
30 to 35 .	119	26	145	112	28	130
35 to 40 .	237	53	290	181	47	228
40 to 50 .	410	131	541	312	111	423
50 to 60 .	457	118	575	385	98	483
60 to 70 .	367	119	486	324	100	424
70 to 75 .	133	31	164	132	18	150
75 to 80 .	62	13	75	65	15	80
80 and upwards	15	5	20	20	2	22

From this it appears that hernia, which is pretty common in the stage of infancy, becomes gradually rarer as life advances till it attains its minimum about the eighth or ninth year; and after this period of life gradually becomes more and more frequent till the close of life. In fact, the susceptibility to the disease seems to increase with the advance of years.

3. *Of the comparative frequency of hernia in men from 20 to 21 years of age.*—M. Malgaigne has chosen this age for the illustration of the comparative frequency of hernia among the male sex, as it is the only one which permits of sufficiently accurate data being obtained. The French laws regarding the recruiting of the army necessitates the taking of an accurate census of the male sex of this age every year, and as hernia is a cause of exemption from service, the relative numbers of those afflicted with it are pretty accurately ascertained. From 1801 to 1810, the number of recruits examined at Paris was 25,503, of which number 694 were rejected on account of hernia, or about 1 in every 36 men. In the environs of Paris, of 5100 recruits 140 were rejected on account of hernia, or about 1 in 36. From 1816 to 1823, of 9836 recruits examined at Paris, 261 were exempted on account of hernia, or about 1 in 37 men; and in the environs, of 1894 recruits 53 were exempted, or about 1 in 35. If, from this number of recruits be abstracted all those who have been rejected on account of deformity or deficiency of height, and who were consequently not examined with regard to the presence or absence of hernia, the proportion falls to about 1 in 31 or 1 in 32. The accurate tables published by order of government of the recruits from 1831 to 1836 inclusive, show the same result, viz. 1 rejected for hernia out of every 31 men.

4. *The comparative frequency of hernia to the total population* is only given on calculation, having no very fixed data to go on, except the ascertained points of the comparative frequency of hernia in the male sex at 21, and the proportions at the different ages as given in the table quoted above, and the relative frequency of the complaint in the male and female sex. With these ascertained facts, M. Malgaigne calculates that no fewer than one-twentieth of the total population are afflicted with hernia.

5. *The relative frequency of hernia to the total population at different ages*, as ascertained by calculation, is given in the following table:—

From birth to one year the proportion of hernia in males
is as 1 to 20.67
1 to 2 years, 1 to 29.09

2 to 3	—	1 to 36.87
3 to 4	—	1 to 55.64
4 to 5	—	1 to 59.72
5 to 13	—	1 to 77.31
13 to 20	—	1 to 41.72
20 to 28	—	1 to 30 74
28 to 30	—	1 to 20.23
30 to 35	—	1 to 16.58
35 to 40	—	1 to 8.41
40 to 50	—	1 to 8.37
50 to 60	—	1 to 5.54
60 to 70	—	1 to 4.37
70 to 75	—	1 to 3.27
75 to 80	—	1 to 3.74

6. *The proportion of hernia amongst the rich and poor.*—Paris being divided in twelve arrondissemens or wards, the proportional number of conscripts rejected on account of hernia from each of these furnishes a prety accurate statement as to the comparative frequency of the disease amongst the wealthy, the middling, and the indigent classes of the population. Thus from 1816 to 1823, in those chiefly inhabited by the indigent classes, 1 was rejected, on account of hernia, out of every 28 men, at 21 years of age. In the wards inhabited by the middling classes, 1 was rejected out of every 38 men; and in those inhabited by the rich, 1 out of every 37 men.

7. *Relative frequency of hernia in the different departments of France.*—It would be impossible to give, in a short space, any thing like an intelligible statement of the results of M. Malgaigne's researches on this subject. It may be stated, in general terms, that hernia was found to be more rare among the mountainous or hilly districts than in those of the plain, and less frequent in towns than in the country; and less also amongst the pure French race than amongst those where the races are crossed with people of other countries. A coloured chart of the departments accompanies the descriptions of this part of the subject, the different depths of colour over which exhibit the relative frequency of hernia in each. [Some further interesting researches relative to the statistics of hernia will be found in our No. for November, 1838, p. 248.]—*Edinburg Med and Surg. Journ.* October, 1840.

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75. *Medical Students in the Dutch Universities.*—The following table is copied from an official report made to the States General, January 24th, 1840, on the condition of the Universities in Holland.

Number of Students, Decembecr 31, 1838.

	Leyden.		Utrecht.		Groningen.		Total
	Natives.	Foreigners.	Natives.	Foreigners.	Natives	Foreigners.	
Divinity.	127	49	130	2	67		375
Law.	204	65	96	5	49		419
Medicine.	150	28	74	9	55		324
Sciences.	10		51		39		100
Letters.	27	14	141	2	48		232
	526	156	492	18	258		
Total.	682		510		258		1450
Total in 1837.	713		533		277		1503

Nederlandsche Staats Courant, February 26, 1840. T. R. B.

AMERICAN INTELLIGENCE.

Successful Operation for Strangulated Hernia under peculiar circumstances—sloughing of the cæcum. By Paul F. Eve, M. D., Professor of Surgery in Med. Col. of Georgia.

In the last No. of this Journal, I had occasion to present its readers an interesting case of strangulated hernia, complicated by the presence of the testicle in the abdominal canal, which had never descended into the scrotum. Since then, another case of no less interest to the profession has occurred in my practice, the remarkable recovery of which I think claims particular attention.

On the 3d instant, I was requested by Dr. Cunningham, the oldest and one of the most respectable physicians of Augusta, to visit a patient then labouring under strangulated inguinal hernia. The previous history of the case was as follows: Jim, belonging to John Phinizy, Esq., of this city, had been long afflicted with double inguinal and scrotal hernia. He was an excellent cook, but his infirmity had caused him to select an easier occupation for the past few years. The family physician, Dr. C., had applied a double truss, and as he then thought after having returned the intestines on both sides. With a magnanimity truly noble, and an honesty worthy of imitation, particularly in younger and less experieneed physicians, this practitioner of medicine for more than thirty years, candidly acknowledged after the operation that he was mistaken, for the hernia could not have been reduced as he believed.

On Sunday, 1st November, while making a sudden effort, the intestine of the right side escaped under the truss, and soon became strangulated. Having failed to relieve the patient by the ordinary means, (and he says that he had often been in the same state before for one or two days at a time,) Dr. C. requested a consultation. I found Jim, at 11 A. M., much troubled with hiccup, and the usual symptoms of strangulation, and failing to return the protruded part, which was about the size of a large orange, I proposed the tobacco injection. As soon as the specific effect was produced, taxis was again resorted to, but with no better success, and Lisfranc's advice of fifteen minutes unremitting effort by this means, for once proved abortive. Venesection had been already employed, and the warm bath and cold applications not being convenient, we agreed to return at 1 o'clock and make another attempt at reduction. Finding it again impossible to effect our object, we decided to reanimate the system of the patient, (still a little depressed by the tobacco, although turpentine injections had been used,) and prepare for the operation.

At 3 P. M., 3d of this month, assisted by Drs. Cunningham, Newton, West, and some medical students, the usual incisions through the skin were made, the hernial sac exposed, and the internal abdominal ring divided upwards and outwards; but still the intestine, which was quite voluminous and of a dark purple colour, could not be restored. The quantity of serum and coagulable lymph which escaped during this part of the operation could not have been less than one quart, flowing out chiefly from the abdominal cavity. The incision down the scrotum was prolonged, and the intestine turned out of its sac. It proved to be the cœcum, with its vermiform process still floating in the iliac region, and which could be distinctly felt by the finger, as there were no adhesions around the neck of the hernial-sac. In the repeated efforts to restore the protruded bowel, we now plainly saw that it was so far mortified, that its containing air was pressed through its coats. The internal abdominal ring was again incised and in more than one direction, yet we could not succeed in effecting the reduction of the hernia.

Believing the patient must die without being relieved, as the portion of the protruded cœcum was nearly sphacelated, and as there was certainly something peculiar about the structure, I considered myself justified in laying open the bowel. The incision made into it was about an inch, and at once allowed a free escape of its contents. The finger was now introduced into the ascending colon, and also into the ileum, through the ileocecal valve. The difficulty of reduction was now discovered to be a great thickening of the membranes of the upper portion of the cœcum, and which was no doubt produced by the constant pressure of the pads of trusses, which the patient had been wearing for years. I think I am in bounds when I put it down at about an inch in thickness, feeling like the fleshy part of the hand. Even with the advantage of an empty gut, and free incisions in the ring, it was with great effort returned into the abdomen. The wound was dressed with stitches and adhesive plaster. The opening in the cœcum was secured by two sutures to the skin.

At the conclusion of the operation, which was prolonged about an hour, the system of our patient was greatly prostrated, and none of us thought he could long survive. At 9 P. M., however, reaction took place, and from the following extracts of my note book, it will be seen he even had a rapid recovery.

4th Nov., 6 A. M.—Has had a bad night; very restless; soreness over whole abdomen; pulse 114. Took 60 drops laudanum; blister covering abdomen. During the day passed air through wound.

5th.—Has had a good fœcal evacuation *per anum*. Much improved; spirits good; chews his tobacco. Dressed wound; looks as well as could be expected. Has some return of hiccup. Sutures ulcerated through the skin.

6th.—Improving slowly. Diet still fluid.

7th.—Had a good evacuation per anum last night, and another one this day.

11th.—Steadily improving, having an evacuation about every second day, with considerable oozing through the wound. Cut off with scissors what appears to be the remains of the protruded bowel, a long irregular slough of about three inches, the sutures having all ulcerated out. It produced neither pain or hæmorrhage. The wound continues to close. On 13th, was visited by the class of the medical college.

At this date, three weeks since the operation, Jim has recovered his flesh, sits up at the fire, and has walked out of his room. The artificial anus is rapidly contracting, and his bowels continue in an excellent condition.

AUGUSTA, *November* 24*th*, 1840.

Statistics of Medical Colleges in the United States, 1839–40.

	Colleges.	Number of Students.	Authorities.
1.	Bowdoin College (spring, 1840)	70	Catalogue
2.	Dartmouth (autumn, 1839)	77	do.
3.	Woodstock (spring, 1840)	80	do.
4.	Castleton (spring, 1840)	57	do.
5.	Harvard University	74	Bost. Med. & Surg. Jour. xxi, 417
6.	Berkshire (autumn, 1839)	63	Catalogue
7.	Yale College	45	do.
8.	New York College of Physic and Surgery	102	do.
9.	Fairfield College of Physic and Surgery	105	do.
10.	Geneva Medical College	87	do.
11.	Albany Medical College	73	do.
12.	University of Pennsylvania	444	do.
13.	Jefferson Medical College	145	do.
14.	Pennsylvania Med. College	87	Medical Examiner, vol. iii, p. 216
15.	University of Maryland	65	Amer. Med. Intel., vol. iv, p. 95
16.	University of Virginia	49	do. do. vol. iv, p. 168
17.	Medical College, State of South Carolina	194	Catalogue
18.	Medical College of Georgia	54	Professor Eve
19.	Transylvania University	257	Catalogue
20.	Louisville Medical Institute	204	do.
21.	Medical College of Ohio	121	Dr. Worcester
22.	Willoughby Medical College	41	Catalogue
	Total	2494	

I have not been able to obtain an accurate account of the number of students attending at the following institutions: Washington College, Baltimore; Columbia College, District of Columbia; Hampden Sidney College; Medical College of South Carolina; Medical College of Louisiana. Presuming the aggregate not to exceed two hundred, the whole number of medical students during the season of 1839–40 may be estimated at about twenty-seven hundred.

From this should, however, be deducted the number of physicians already graduated, who were in attendance at the different schools, and whose names are included in the respective catalogues. Thus, in the catalogue of the

University of Pennsylvania	50	are M. D.s
Jefferson	17	do.
Transylvania	22	do.
Louisville	12	do.
New York	8	do.
Berkshire	3	do.
Dartmouth	2	do.
Fairfield	2	do.
Albany	5	do.
South Carolina	4	do.
Castleton	9	do.
	134	

While in Geneva 13 were members of the senior class in the Literary College, making 130. If we deduct the above, the actual number of medical students will fall below 2600.

Number of Graduates. 1839-40.

1.	University of Pennsylvania[*]	163	Amer. J. Med. Sci., vol. xxvi, p. 261
2.	Jefferson Medical College	57	Amer. Med. Intel., vol. iii, p. 387
3.	Pennsylvania Med. College	28	Medical Examiner, vol. iii, p. 454
4.	Transylvania	60	Catalogue
5.	Louisville	39	do.
6.	Medical College, State of South Carolina	63	do.
7.	Yale	15	Circular for 1840-41
8.	Harvard[†]	22	Bost. Med. & Surg. Jour., xxxiii, 116
9.	University of Maryland	14	Amer. Med. Intel., vol. iv, p. 95
10.	Washington College, Baltimore	20	do. do. vol. iv, p. 96
11.	Willoughby	10	Catalogue
12.	New York	20	Regent's Minutes
13.	Fairfield	26	do.
14.	Geneva	19	Amer. J. Med. Sci., vol. xxvi, p. 264
15.	Albany	17	Catalogue
16.	Georgia	18	Circular, June, 1840
	Total	591	

Residences of Students.—I have catalogues of *seventeen* institutions, viz: Bowdoin, Dartmouth, Woodstock, Castleton, Berkshire, Yale, New York, Fairfield, Geneva, Albany, University of Pennsylvania, Jefferson, South Carolina, Georgia, Transylvania, Louisville, and Willoughby—the students of which amount to 2098. The following are their residences:

Maine	63	Carried up	1623
New Hampshire	78	Florida	2
Vermont	112	Arkansas	1
Massachusetts	65	Kentucky	187
Connecticut	39	Tennessee	112
Rhode Island	2	Ohio	62
New York	379	Michigan	6
New Jersey	38	Indiana	29
Pennsylvania	162	Illinois	13
Delaware	9	Missouri	18
District of Columbia	4	Wisconsin	1
Maryland	22	U. S. Navy	1
Virginia	148	Texas	2
North Carolina	87	Canada	20
South Carolina	167	Nova Scotia	5
Georgia	111	New Brunswick	1
Alabama	91	West Indies	4
Mississippi	37	South America	3
Louisiana	9	Great Britain	8
	1623	Total	2098

T. R. B.

A Case of Amputation at the Shoulder Joint, with a description of a new instrument for securing deeply seated arteries. By W. E. Horner, M. D., Professor of Anatomy in the University of Pennsylvania.—The lines of incision for the removal of the upper extremity at the shoulder joint, have been so much varied by different authorities since De Dran's original operation about the year 1731, that little remains for the surgeons of this day except to select from the numerous routes which have been traced for them. We may consider the modes of operating as reducible to three: first, a circular incision of the integuments, making a flap of them, and a subsequent circular incision of the muscles, the steps being very much as in common amputations. Upon this plan I saw the late Dr. Dorsey, assisted by Dr. Physick, operate in 1816 for a fungus hæmatodes of the arm. The patient being seated on a chair, the subclavian artery was compressed by myself upon the first rib with the fore finger of one hand, sustained by that of the other. The arm being excised, the axillary artery was then secured, and with but little bleeding.* The second mode consists in making a semi-elliptical flap on the anterior, and another on the posterior semi-circumference of the joint, out of integuments and muscles conjointly. Le Dran's, Sharp's, Broomfield's, and Dessault's proceedings, are represented under this. The third plan consists in making the flaps from the deltoid muscle and its integuments, this having been introduced by La Faye, and variously modified in subordinate points by different surgeons, and more especially those of the French schools.

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[*] Including four graduated in July, 1839.

[†] The whole number for the year ending August 26, 1840.

The operation of Dr. Dorsey was performed with the dexterity which distinguished that lamented surgeon, and had a happy termination. The time consumed in it amounted to eleven minutes, including that portion devoted to securing the cut vessels. The axillary artery was evident at the first glance, as he states, and did not bleed; the arrangement for arresting its circulation having been found effectual. The reflections arising from witnessing this case, were, however, that a higher security might be given to the operation by a different position of the patient, and by a different period for securing the artery. For if, upon the moment of excising the limb, the patient from faintness had fallen from his seat, or any unsteadiness had occurred in the pressure upon the subclavian artery, the chances of a fatal, or at least a very profuse bleeding, were imminent. The conclusion to which I came, therefore, was, that the preferable process belonged to that body of surgeons who adopted the recumbent position, and who, in addition to the advantage from a provision to press the subclavian artery on the first rib, likewise took up the axillary before the severance of the limb.

The facility with which the axillary artery can be reached by adopting a recumbent position, and laying open the front of the axilla in the earliest stages of the operation, would scarcely be anticipated by one who had not witnessed the proceeding; and it affords to this otherwise formidable act of surgery, a security from hæmorrhage certainly not to be exceeded by ordinary inter-articular amputations, where we have the resort of the tourniquet. It may possibly be a point of discussion whether the axillary artery is to be exposed by opening the axilla previously from behind, as recommended by Larry, or by opening it in front, as exhibited in the following case; the latter proceeding, however, recommends itself by the fact of greater ease to most persons of a dorsal decubitus, and by the certainty of not coming upon the axillary artery before the axilla is fully laid open; a circumstance more likely to happen from the contiguity of this vessel to the latissimus dorsi, where the exposure from behind is resorted to.

Joseph Reynolds, aged thirty-three, of good constitution, a labourer in Mr. Buck's stone-quarry, on Ridley creek, near Chester, in the act of withdrawing an instrument, called needle, from a rock, in the process of blasting, produced an explosion of the charge, amounting to about four ounces of powder. The result was an extensive lacerated wound of the left arm, beginning at the under side of it a little below the axilla, and proceeding obliquely upwards. It was probably produced by the aforesaid instrument. The *os humeri* was grazed, but not broken; the upper end of the brachial artery was torn in two, also the brachial vein; all of the adjoining nerves, as the median, ulnar, spiral, and two cutaneous, were laid bare, the coraco-brachialis and biceps flexor were cut in two, and the insertion of the pectoralis major was lacerated and exposed. A severe contusion was inflicted on the adjoining lateral part of the chest, and the face was very extensively discoloured by the grains of powder which were driven into the skin; the cornea of the right eye was perforated by some grains of the powder, the left eye was also injured. The ends of the indicator, middle,

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* See Dorsey's Elements of Surgery, p. 319, vol. ii, Philadelphia, 1818.

Case of Absence of the Uterus.—Dr. Isaac E. Taylor reported to the New York Medical and Surgical Society the following case: "Mrs. McM. consulted me June 14th, 1839, for a retention of her catamenia. She had been under the care of several medical gentlemen for the last three years, without any benefit. She is well formed, and her appearance healthy, though not as healthy as she was three years ago. Her age is 23, has been married four years. She has the ordinary symptoms incident to the attempt for her catamenia to commence, besides intense labour-like pains, which are so aggravated at times as almost to deprive her of her reason; these pains continuing every month for eight or nine days with partial remissions, without any secretion taking place from the vagina, or any vicarious discharge from any other organ. The periodical attacks commenced when she was 15 years of age. Concluding from her statement that some obstruction existed at the os uteri, I advised an examination, supposing that if any did exist, that the method recommended by Dr. McIntosh might be put in requisition. On examination, my finger met with an obstruction, which prevented it from passing further than the first joint of the forefinger. This induced me to ask for an inspection of the parts, which she reluctantly consented to, and I discovered that the finger could be passed to the extent of an inch—that there was a small orifice resembling the meatus urinarius, directly below it, into which a probe was inserted, and carried up no further. The finger then passed round the os externum, felt at the posterior portion of the vagina another orifice about three-fourths of an inch from the fourchette, which proved this was only a small membrane passing obliquely backwards; this was divided with a bistoury, and the finger then introduced made no further entrance, and no os uteri could be felt by the finger, nor seen by the use of the speculum. Bougies were tried to discover if there existed the least perforation that could admit of their being passed further up, but this elicited nothing more; in truth, the termination of the vagina could be seen by separating the labia, and the inch in length of the vagina was caused by the finger pushing it up. A further examination was resorted to by introducing the left forefinger into the rectum, while the catheter was introduced into the bladder, and supported by the thumb of the right hand, whilst the forefinger was in the vagina. The left forefinger could distinctly pass the right forefinger, and feel the end of the catheter in this organ. At this moment the bladder expelled its contents, and this organ could be distinctly felt behind the pubes, hard and of the size of a small egg, by the finger in the rectum. The finger was introduced also, separately into the vagina and rectum, but nothing like the uterus could be ascertained. No tumour could be felt when she was lying on the bed with the knees flexed on the abdomen. The external parts were well developed, orifice of the urethra natural, clitoris small, pubes well covered with hair, mammæ well formed and of good size; no swelling of the hypogastrium, and sexual appetite not deficient. Drs. M. Post and Peckham visited the case with me, and at my particular request, Dr. J. C. Cheesman also saw her. The same examination was also resorted to, but nothing more elicited. We were, therefore, from these examinations, constrained to believe that this was a case of congenital malformation, or absence of the uterus, unless it was situated very high up, and the vagina closed to the extent of more than three and a half to four inches. The question, from the perfect examination made, could an operation be justifiable after the manner recommended by Amussat? brought to my mind the unsuccessful case of Dr. McFarlane of Glasgow, and we deemed it proper to advise that nothing should be attempted, which she was so solicitous for, solely because she was anxious to have a family, to gratify her husband. Her husband had never made any complaint of dissatisfaction, and it excited our curiosity to have an inspection of his "parts," should a suitable occasion offer. This afterwards occurred during an attack of dysentery under which he was suffering, and the penis was the size in thickness of a youth of 15 years, but the testicles were well developed."—*New York Journ. of Med. and Surg.*, October, 1840.

Adjusting Power of the Eye.—The following extract, from the published "*Proceedings of the American Philosophical Society,*" presents the substance of a communication made by the editor of this Journal, to the Society at their meeting of the 18th of September last. Since that communication was made, other facts of a similar character have been observed.

"Dr. Hays made an oral communication relative to the operation recently devised for squinting, and to its effects in modifying the adjusting power of the eye for near and distant objects.

"Dr. Hays stated, that certain phenomena which he had observed in one of the cases in which he had divided the internal rectus muscle, for the cure of squinting, seemed to favour the theory of the adjustment being made by an alteration in the form of the eye, under the conjoint action of the four recti muscles; a theory rejected by the best physiologists of the day.

"The case, the details of which Dr. Hays related, was that of a gentleman thirty-six years of age, who had squinted with his left eye since the age of five years. Both the eyes were presbyopic; the left, however, was most so, and required for distinct vision a glass three Nos. higher that the other eye; the respective Nos. being 11 and 14. Vision with the left eye, even by the aid of a glass, was not perfect, words printed in long primer being scarcely legible. After the division of the internal rectus muscle, vision not only improved, but the eye became less presbyopic, and at the present time, three weeks since the operation, said Dr. Hays, the glass (No. 14) which had been before adapted to the patient's left eye, now magnifies so much that it is unpleasant to read with it; and he is able to see best with glass No 11. On careful comparison, he is unable to perceive any difference in the size of objects viewed with either eye through this glass; and an opera glass, adjusted to one eye, seems equally well adapted for the other. These facts, Dr. Hays remarked, show that a change has taken place in the left eye, and this probably consists in an elongation of its antero-posterior diameter, resulting from the operation.

"Dr. Hays also made some observations on the mode in which squinting causes an impairment of the functions of vision, and stated, that from a great number of cases which he had examined, it appeared to him to be a general rule, the greater the degree of strabismus, the more imperfect is the sight of the affected eye. In all the cases in which he had operated, the sight had been improved.

Removal of a Portion of the Integuments of the Scrotum for the Cure of Varicocele. This operation lately devised by Sir Astley Cooper, (see this Journal for August, 1838, p. 492,) has been performed for the first time in this country, we believe, by Dr. John Watson of New York. The relief afforded, Dr. Watson states, was not quite so great as in the cases published in Great Britain, yet sufficiently so to recommend a repetition of the operation, in preference to any other hitherto proposed, in severe cases of this disease.

The subject of the case was a seaman aged 21. The operation was performed on the 24th of June, in the New York hospital, and the patient was discharged on the 4th of August. At this latter date, "the cicatrix produced by the healing of the wound was sufficient to support the distended veins, and prevent them from protruding much below the external abdominal ring, but they had not become permanently contracted or consolidated. After the patient had been for some time in bed, the swelling would appear to be effaced; but after he had been walking about the house all day, the enlargement of the veins was still apparent. He was, however, permanently relieved of the dragging sensation and pains of which he complained before the operation.—*N. York Journ. Med. and Surg.*, October, 1840.

Remarks on Statistical Medicine, contrasting the result of the Empirical with the Regular Practice of Physic. By Samuel Cartwright, M. D., of Natchez.—This is a very curious and interesting paper, and is one of the most judicious and efficient attempts to demonstrate the evils of quackery that we have met with.

We have long despaired of any means being devised for opening the eyes of the public to the pestilence in question, but if any one can effect that object, certainly it is that which Dr. C. has adopted. His investigations have every mark of having been made with care and conscientiously, and his results appear irrefutable.

It appears from Dr. Cartwright's researches, that during the ten years from the 31st December, 1823, to the 1st January, 1834, the whole number of deaths was 978, the population being at an average of 3,000; being an annual mortality of 1 in 30.6 per cent. "Natchez, during these ten years mentioned, *protected and encouraged science, and science protected and guarded her citizens.* The citizens of Natchez, during these ten years, were protected by strict laws against murderous quacks and empiricism of all kinds." * * *

"Before the termination of 1833, the laws of Mississippi, which protected the science of Medicine and guarded the people against ignorant presumers and pretended reformers, were virtually annulled. By the first of January, 1834, a host of empirics had made their way into our city, and commenced in good earnest, what they called a reformation in medicine. They first began their operations by using every artifice to destroy the confidence of the public, in the virtue of those remedies and means which the accumulated experience of ages has found to be the most effectual in the treatment of a large class of diseases, particularly such as occur in warm climates. They used great and unwearied exertions, not only to prejudice the public against most of the medicines which physicians employed, calling them poisons, but they endeavoured to destroy public confidence in the physicians themselves, and to bring contempt and disrepute upon the regular exercise of the medial art. So great was their zeal, they succeeded in weakening public confidence in the medical profession in a greater degree than could have been expected in so intelligent a community. Some good citizens of Natchez and its vicinity they entirely alienated from it. In some instances they even succeeded in turning those who owed their lives to the scientific practice of medicine, altogether against it. The natural effect of debility and old age were artfully attributed to the influence of calomel and the lancet. Deaths, which no human means could avert, and which must occur while man is mortal, were said to have been occasioned by poisonous drugs. The more numerous cases, which *got sound and well* under the use of the *very same* drugs, were overlooked. Nothing was likewise said of the many remediable cases which proved fatal under the empirical practice—but the welkin was made to ring with every case which got well under it, or which recovered in spite of it."

Dr. C. next applies statistical medicine to that portion of time which has elapsed since the introduction of the pretended reformed medicine into Natchez.

"The total number of deaths," he observes, "which occurred in ten years, from 1823 to 1834, is 978. If, therefore, a population of 3000, in ten years, lose 978, how many deaths would occur in a population of 6000 in four years and nine months? The total number should be 929. But the actual number of deaths recorded in the sexton's books, the last four years and nine months, since the pretended reformation in medicine commenced, is 1315. The reformation, therefore, has reformed, in four years and nine months, no less than 386 individuals out of existence. But to put the matter in a plainer light—the average annual mortality of Natchez, since empirics have divided the practice with the regular physicians, is no less than one death per annum in every 21.7 of the inhabitants; but to estimate the mortality on the actual population of 1837, when Natchez contained its highest population, 6000, it would be 1 in 22.2; but in the ten years preceding this mixture of empiricism with the regular practice, only one in every 30.6 died per annum. During these ten years, the number who died under the care of physicians was about 1 in 47 per annum, and the number of unreported deaths during the same period was 1 in 89 per annum. But during the last four years and nine months. including the late epidemic, and including all the cases from the Natchez hospital, the physicians lost 1 in 41 per annum, whereas the unreported deaths of the same period were 1 in 45.7 per annum; nearly double the unreported cases of the former period, and exceeding the whole mortality occurring in the practice of the physicians during ten years. But it may be supposed, that the increased mortality of the last four years and nine months, may be owing in part to the greater number of persons who have settled in Natchez, and who have had to undergo that peculiar change called acclimation. It may also be supposed, that the comparatively small mortality of the ten preceding years might be owing to a greater proportional number of citizens leaving town during the sickly months in the first period of ten years, than in the second period of four years and nine months. Plausible as these suppositions may be to account for the great difference of mortality during the two periods, a voice from the cemetery proclaims that such is not the true reason. It is well known that the fever of acclimation, or the stranger's fever, as it is sometimes called, never occurs in the winter or spring. It is likewise known, that no persons fly from town in order to avoid sickness in January, February and March. But what does the voice from the burial ground say? It says, that the total number of dead bodies conveyed there, during a period of ten years, from 1823 to 1834, in the months of January, February and March, was only 159; and that the number carried thither, the last five years in the same months, January, February and March, is no less than 239. Half the time and twice the population ought to give the same results, as twice the time and half the population. If, therefore, the introduction of empiricism, and patent medicines into Natchez had added nothing to the mortality of the place, the aggregate number of deaths which occurred during the first quarter of each of the last six years, should not have exceeded the aggregate number of deaths which occurred during the first quarter of each of the ten preceding years. But they do exceed them, as far as 239 exceed 159. The difference between these two numbers gives the precise increase of mortality, during the months of January, February and March, since half a dozen or more deluded empirics made this city their place of residence and commenced, what they called, a reformation in medicine. The average annual mortality, taking these months as the standard, during ten years, was only 1 in 47. But no sooner did illiterate mountebanks make a lodgement in Natchez, than the mortality of January, February and March, increased to 1 in 31.4 per annum. In the month of April, during the ten years between 1833 and 1834, the physicians lost 39 patients, and during the same time 11 deaths were unreported. The whole mortality for ten Aprils in succession was only 50. But since quackery has been let loose upon the people of Natchez, 85 persons have died during the last five Aprils—being 35 more than the proportional number of deaths that occurred before the empirics proffered their services to the good people of this city.

"In other words, making April the standard, the average mortality would be only 1 in 50 per annum of the total population, including strangers, during a period of ten years. But since Natchez has been overrun by empirics, the mortality of the last five Aprils has increased to 1 in 29.4 per annum. The mortality which occurred in the practice of the physicians in each month of April for ten years, between 1823 and 1834, has been at the rate of |1 in 64.2. The mortality which has occurred in the practice of the physicians of the last five Aprils has been at the rate of 1 in 65.7—nearly equal as far as the physycians are concerned in both periods. Yet in the first period of ten years only 1 in 50 died, but as soon as quackery was introduced, 1 in 29.4 died. It is worthy of particular remark, that the number of deaths reported by the physicians in both periods, not only in the month of April, but every other month of the year, is relatively very nearly the same. Thus, 39 deaths were reported by physicians in the ten Aprils of the first period, and 38 in the five Aprils of the second period. But while the unreported deaths of the first period were only 11, the unreported deaths of the second period amount to 47. Again, during the first ten of the last fifteen Mays, Natchez lost in all 73 individuals; 40 reported by physicians and 33 unreported cases. But during the last five Mays, she has lost 99 individuals, 33 reported by physicians and 66 unreported cases, or cases reported by persons who are not regular physicians. During the last period the unreported deaths, or those which have been reported by persons not belonging to the medical profession, double the number of deaths reported by physicians; whereas before the introduction of quackery, a large majority of all the deaths were reported by the physicians. To sum up the matter, therefore, in January, February, March, April and May, of the ten years preceding 1834, 293 persons died in Natchez; while in the same months for the last five years, 421 have died. In half the time and twice the population, the number should have been the same. No less, therefore, than 128 individuals have unnecessarily perished, or have been wantonly sacrificed, since the first of January, 1834, during the five most healthy months in the year. Taking these five healthy months, as being the months best calculated to test the success of the empirical practice, as the months when empiricism is most popular, (diseases being the mildest, and the principle of life the strongest,) 128 individuals have died, over and above the number which did die in twice the time and half the population, before the empirical practice was introduced, and before public confidence was shaken in the medical profession. If these healthy months were made the standard of comparison, Natchez would lose 331 individuals in five years over and above the number she lost in ten years and half the population, under the regular exercise of the medical profession, unmixed with quackery. The empirics will no doubt try to evade the issue by disowning the unreported cases, or may even lay them to the charge of the physicians. But the main and essential fact, *that the mortality of Natchez has greatly increased since they came to town and commenced a pretended reformation in medicine, will still stand in bold relief against them.* If they could prove that the physicians neglected to report all the deaths which occurred in their practice, the physicians, on their part, could prove that many of the cases they did report, had previously been subjected to steam, or that the sick had eked out the first period of their disease in the use of nostrums and quack medicines. The remedial statistics of Natchez prove in the clearest and most undeniable manner, that, previous to the introduction of quackery, the annual average mortality for ten years in succession, embracing a very sickly period, rife with epidemic diseases, was much less, or at least very little, if any greater, than the average mortality of most other towns and cities in the world which are reputed healthy. But since the introduction of quackery, the annual average mortality has greatly increased. To charge the increased mortality to the present regular physicians would avail empiricism nothing, unless it could blot out from the records of the city the diminished mortality under the regular physicians, before it was permitted to obtrude itself among them. The present physicians, and those of a former day drank at the same well of science. When the empirics came to Natchez the annual average mortality, including strangers, still-born children, and the deaths occurring among the negroes brought here for sale, was only 1 in 30.6—and had been at this rate for the ten preceding years, while the mortality among the citizens' proper did not exceed 1 in 61; but the very month in which the empirics commenced, in good earnest, to reform a science they had never studied, the mortality suddenly increased to one death in every 21 inhabitants per annum, notwithstanding that Natchez had, in the mean time, ceased to be a market for the sale of negroes, which formerly added very considerably to the bills of mortality, not only from the deaths which occurred among them, but likewise from the contagious diseases, as measles and whooping cough, which they almost annually introduced into the city.

"The important fact, that the mortality of Natchez has greatly increased since the introduction of quackery, cannot be evaded by saying, that I have rated the population too high at one period and too low at another. The population in 1830 was known to be 2789. The number of deaths which occurred in that year is likewise known to be 80—which would make the average for that year only 1 in 34.8. The population in 1837 amounted to 6160. The number of deaths which occurred in nine months of that year, omitting entirely the deaths which occurred during the period of the epidemic in August, September, and October, amounts to 186—this would give an average mortality of 1 in 24.4 per annum. But if the population since the empirics have been permitted to practise medicine in Natchez, be put at the highest enumeration, and at the lowest enumeration previously to their introduction, still would it be that the mortality of the city, since the introduction of quackery, has increased in a manner sufficient to demonstrate that the city has gained nothing by the pretended reformation in medicine, but has lost much. I do not say, nor do I believe, that the empirics have actually carried a sufficient number of patients through a full course of steam and No. 6, to account for the great increase of mortality; but I do say, and believe, that the war they have waged against the known and well-tried remedies of the Materia Medica, and the measures they have taken to destroy public confidence in the medical profession, are nearly sufficient of themselves to account for the increased mortality, without taking into the estimate those who died under their scalding treatment."

Medicinal Properties of the Cotton Plant.—Dr. E. F. Bouchelle of Columbus, Miss., states in a letter to Prof. Short of Louisville, that the cotton plant displays a particular affinity for the female sexual organs, and is capable of modifying their functions in a remarkable manner. He has exhibited it as a remedy in amenorrhea with decided benefit, five cases of which are mentioned by him, but in terms too general to be satisfactory. He seems to regard it as a specific for this form of catamenial derangement, since he expressly states that it is applicable to every case without regard to the state of the system.

But it is as an oxytocic that the article is most celebrated by Dr. Bouchelle, since in his hands it has proved itself to be nowise inferior to the secale cornutum. He has administered it in several cases of labour, when his hopes of a favourable issue were gloomy indeed, and in every instance he was forcibly impressed with its benignantly specific influence upon the parturient action of the uterus. He has given it *experimentally*, also, in cases of natural labour, and with equally satisfactory results. In such cases, he will allow us to suggest, the remedy maintained a strict neutrality, else it could scarcely have failed to do mischief. In natural labour, the expulsive contractions are justly proportioned, both as to intensity and frequency of recurreuce, to the obstacle to be overcome; and they cannot be accelerated or strengthened without risk of injury to both mother and child. Dr. Bouchelle assures us that the cotton plant not only possesses the property of invigorating feeble contractions of the uterine fibres, but that it *originates* expulsive contraction at any period of gestation, and will induce *immediate* abortion when taken in the proper quantity.

Dr. Bouchelle avers, that the cotton plant is habitually resorted to by slaves in the South for the criminal purpose of inducing abortion, and that it is a fact long and well known in that region that two-thirds, at least, of the likeliest and youngest female slaves are either sterile or invariably miscarry when they do become pregnant, from which he infers, furthermore, that the use of the article destroys the generative capacity. He mentions as a remarkable fact, that those who resort to it either with the view of inducing abortion or of destroying the generative capacity, experience no detriment to their health therefrom.

The preparation used by Dr. Bouchelle is a decoction made by boiling four ounces of the inner bark of the root in a quart of water until it is reduced to a pint. Dose, a wine-glassful every twenty or thirty minutes as an oxytocic; he does not specify the dose, &c., in amenorrhœa.—*Western Journ. Med. and Surg.*, August, 1840.

Congenital Fungus Hæmatodes.—Prof. Drake has recently been shown by Drs. Carpentier and Blackstone, a case of this in a female child, two days old. The disease occupies the whole of the left nates, which is swelled out into a great, shining, globoid tumour; rendered irregular by tuberous elevations. It extends from the perineum, anus and vulva to the sacrum and the spine of the ilium, so as to involve the acetabulum. Its colour is deep red. Many of the cutaneous veins are much enlarged. A portion of the skin had suffered abrasion and considerable hæmorrhage had already occurred. Some parts of the tumour are hard, others soft—the general mass felt hard. It was tender under the hand. In short it had all the diagnostic marks of encephaloid, before fungous growths appear. The child was rather lean but seemed to be in health; and was free from tumours or malformations in any other part.—*Western Journ. Med. and Surg.*, July, 1840.

Stramonium in Dysmenorrhœa.—Dr. T. Cogley, of Mount Vernon, Ohio, states, in a communication in the *Western Journal Med. and Surg.*, for November, 1840, that he has used the stramonium with more or less success, in at least six cases of amenorrhœa, and is therefore induced to regard it, as one of our most efficient remedies in that disease. The remedy is contra-indicated where there is a plethoric state of the system, and this condition must be removed by venesection and catharsis, before the stramonium is administered. Dr. C. gives the pulverised seed in such doses, as considerably to dilate the pupils. The extract would doubtless be a neater mode of administering the remedy, and if we might judge from the effects of a kindred article, the extract of belladonna, we should anticipate benefit from its use.

Nasal Polypus.—Dr. Brice, of Newark, Ohio, is said to have permanently cured three cases of nasal polypus, by the application of the sanguinaria *canadensis.* He employed both the powder and the decoction of the root.—*Western Journ. Med. and Surg.*, September, 1840.

Library of Practical Medicine.—The American edition of the third volume of this valuable work is completed. This volume comprises the diseases of the Organs of Respiration, by Dr. Williams; Influenza, by Dr. T. Thompson; Asphyxia, by Dr. Carpentier; Diseases of the Organs of Circulation, and Malformations of the Heart, by Dr. Joy. It is in all respects, at least equal to its predecessors.

Proceedings of the Connecticut Medical Society.—This Society held its annual convention at New Haven, on the 13th of May, 1840. A dissertation "on the advantages of prompt and efficient practice in acute diseases," was read by Dr. Richard Warren. The Society numbers 376 members.

College of Physicians and Surgeons at Fairfield, New York.—We understand that this institution has been closed.

Albany Medical College.—Several changes have been made in this institution during the past year. The faculty at present are as follows: Alden March, M. D., President and Professor of Surgery; James McNaughton, M. D., Prof. of the Theory and Practice of Medicine; Ebenezer Emmons, M. D., Prof. of Materia Medica and Natural History; Lewis C. Beck, M. D., Prof. of Chemistry and Therapeutics; James H. Armsby, M. D., Registrar and Prof. of Anatomy; David M. McLachlan, M. D., Prof. of Obstetrics and Diseases of Women and Children; Thomas Hun, M. D., Prof. of Institutes of Medicine; Amos Dean, Esq., Prof. of Med. Jurisprudence.

A Second Appeal to the People of Pennsylvania on the subject of an Asylum for the Insane Poor.—The necessity for an institution for the Insane Poor of this state is ably and forcibly shown in this pamphlet. As a citizen of the commonwealth, we feel mortified that a second appeal in favour of a project of such manifest and pressing importance should have been required, and trust that no real or fancied considerations of *convenience* shall be allowed longer to postpone the just claims of those who are in poverty and deprived of their reason, to such alleviation as their afflictions will admit of.

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ARTICLE I. *Observations on Remittent Fever, founded upon Cases observed in the Pennsylvania Hospital.* By THOMAS STEWARDSON, M. D., one of the Physicians to the Institution.

THE remittent is by far the most common form of fever, the intermittent excepted, which is met with in the middle and southern sections of the United States. It is described in every elementary treatise on the diseases of our country, and yet it is surprising how few particular histories of it we possess, affording a connected and detailed account of the results of personal observation. To Europe, also, in the southern portion of which, especially the south of France and Italy, this disease prevails to a considerable extent, the same observation is in some degree applicable, for there also the treatises on remittent are few and imperfect, when compared with the numerous and elaborate histories of the several forms and appearances of continued fever.

By most physicians, we believe, that remittent is regarded as much more nearly allied to intermittent than to continued fever. By some, indeed, the two first, viz., intermittent and remittent, are considered as essentially the same disease, which in all its forms is entirely distinct from proper continued fevers. It has also been supposed that remittents were mere modifications sometimes of continued, and at others of intermittent fever; and again, it has been assumed that most, if not all of these fevers, are identical in nature, and vary only in form and type, owing to certain accidental circumstances of season, climate, temperature, &c. One eminent writer, M.

Bouillaud, has denied the very existence of remittent fever, which he most unceremoniously styles a real nosological superfœtation (*veritable superfœtation nosologique.*) The principal if not the only ground upon which this declaration is founded, is, that M. B. had never met in the hospitals with a disease to which the distinctive title of remittent was properly applicable. No weight, however, can of course be attached to such an argument, when it is known that this form of fever, so common in certain countries, and described as remittent, bilious, &c., is rarely if ever seen in Paris. Indeed, whoever reads with attention the works of Lind, Johnson, and others, cannot fail to recognise in their descriptions a disease presenting features very different from those which belong to proper continued fever, at least those species of it to which the terms typhus and typhoid have been respectively applied. To avoid confusion, I will here observe, that, in accordance with the views of several recent writers, I restrict the term typhus to that species of continued fever which has been at various times described under the name of jail or hospital fever, petechial typhus, &c., and in which the glands of Peyer retain their healthy condition; whilst, by typhoid fever, I understand the disease described under that name by Louis and Chomel, the especial anatomical character of which consists in a peculiar alteration of the glands above mentioned. The latter is identical with the common continued fever of this portion of the United States, and, according to the account of Professor Jackson, of Boston, it would appear to be the prevailing form of fever in the neighborhood of that city, and perhaps also in the eastern states generally.

By remittent fever is understood a disease in which there are distinct paroxysms of fever, alternating with remissions, the paroxysms for the most part coming on regularly every day, though generally, perhaps, more severe at the tertian period. In some cases the remissions are so perfect as to amount almost to intermissions, whilst in others they are very indistinct, and hence it is perfectly true that as to mere type, the disease sometimes approaches to the intermittent, and sometimes to the continued. But however indistinct the remissions, or whatever may be the form which the disease assumes, and few are subject to such variation from season, climate, &c., I believe that it will always be found to possess certain characteristics, which mark it out as essentially distinct from typhoid and other continued fevers. The difference, then, and I think the reader will find much in what follows to sustain the opinion, is not one of mere type, but of essential nature, and the term remittent is no farther applicable to the disease before us, than as it expresses a feature generally observable throughout the whole or the greater part of its course, but still in some cases so slightly marked as to be with difficulty distinguishable, except, perhaps, for a short period at the commencement, or at the approach of convalescence, from the ordinary diurnal remissions of most fevers. The above view is the one which is perhaps now most generally adopted, but to establish on more satisfactory grounds the analogies and discrepancies observable between remittent and other idiopathic fevers, as well as to elucidate a variety of questions connected with it, detailed histories of the disease as it occurs in different places especially the different sections of our own country, accompanied with a full description of the post mortem appearances, are still wanting. Modern discoveries in reference to the morbid changes observable after death in fevers, as well as the more accurate appreciation of symptoms with reference to these and to diagnosis, render it much easier than formerly to draw the line of distinction between the different species of fevers, as the number of points of comparison is greatly increased.

In the following pages I shall give an account of the cases of remitting fever which occurred in the Pennsylvania hospital during my term of duty in the year 1838, as well as of the fatal cases which occurred during the two following years. In the season of 1838, which was the first of my attendance in the institution as prescribing physician, I kept notes of every case of the disease which was admitted, but from various circumstances, the details which they contain are much less numerous than I could have desired. These notes were for the most part taken by myself, but for an account of the state of the patients at hours when I could not conveniently visit the wards, I am indebted to the kindness of Drs. Smith and Meigs, the resident physicians. Regular notes of all the cases were not kept during the two following years, but I have added to the series the fatal cases which occurred during these years, in order to render the account of the post mortem appearances as complete as possible. For much assistance in drawing up the notes of the cases which occurred during the past season, I am indebted to Dr. Stillé, at that time resident physician. In the analysis of the cases before me, I shall adopt the numerical method, not because I think that "numbers are the only true demonstrable root of human knowledge," but that we may frequently, by their means, in the analysis of the phenomena of disease, arrive at positive and highly important data, scarcely attainable in any other way. That this method has been already abused, and carried out into a most wearisome and unprofitable detail, may perhaps be true, but we must not on this account disclaim its proper and legitimate use. By some it is confounded with the calculation of probabilities, to which it has not, in many respects, the most remote affinity. The object of its employment is simply to arrive at more varied and precise data than are otherwise attainable, and thus to lay a broader and more secure foundation on which to rest our conclusions.

The whole number of cases of remittent fever admitted into the medical wards of the Pennsylvania Hospital, exclusive of a small ward for negroes, from the 1st of July to the 1st of October, A. D. 1838, was 20. The whole number of patients admitted during the same period was 109, three of whom only were affected with typhoid fever. The remainder laboured under acute dysenteries, intermittent fevers, and various chronic diseases. In the above

20 cases I do not include that of an individual who entered the 25th of August, and stated that he had been sick for 18 weeks, his disease having commenced whilst he was on the Susquehanna, by chills which came on every other day. Soon after his admission he became comatose, his skin was jaundiced, pulse frequent, and skin warm, stomach irritable, and a peculiar unpleasant sour odour from the body. He died on the 28th, about 64 hours after admission, and, upon examination, the principal lesions observed were a yellow colour of the membranes of the brain, which extended even to its substance, the cut surface of which presented light yellowish red points, instead of the ordinary red dots; the heart was considerably enlarged, and the valves thickened; the liver smaller than natural, especially in the left lobe, its structure perfectly cirrhosed, the granulations varying in size from a large pin's head to that of a very small pea, and of a pale yellow; one kidney (the other not examined) of double its natural size, the increase owing partly to great distension of the calyces, and partly to hypertrophy of the cortical substance; the stomach and upper portion of the alimentary canal presenting some marks of inflammation. The history of the above case in my possession is very imperfect, but enough has been stated, I think, to render it quite probable that it should be regarded as one, not of remittent, but of long continued intermittent, complicated with enlargement of the heart, cirrhosis of the liver, and chronic disease of the kidney, to the latter of which, perhaps, the fatal termination by coma may in great measure be referred. From the above series of 20 cases are also excluded a few which terminated favourably during the same period, of which either the notes are exceedingly incomplete, or the diagnosis doubtful.

Of the 20 cases, 1 only was a female; but no inference can hence be drawn as regards the comparative liability of the two sexes to be attacked by the disease, as the women's ward contains much the smaller number of patients; and those who are likely to become its inmates are generally much less exposed to the causes of the disease than the occupants of the men's ward.

The 19 men were all either sailors engaged in the coasting trade or labourers employed upon the public works in Pennsylvania, and principally on the canal near Columbia. Not one had been a permanent resident of Philadelphia for even a few months previous to admission. Of the 14 sailors, 10 were attacked on board ship, or immediately upon their arrival; 3 within a few days afterwards, at the most ten days or two weeks, and 1 was sick when he went on board. Of the remaining 5, 4 were Irish labourers and 1 was a schoolmaster, all of whom, except one, where this circumstance is not noted, were attacked whilst residing in the neighbourhood of Columbia, on the Susquehanna, where the disease was very prevalent. The female patient abovementioned was a domestic, who contracted the disease on the Schuylkill, a few miles above the city. We here, at the outset, observe a remarkable difference between this disease and typhoid fever, the latter being peculiarly apt to occur in large cities. Unquestionably, typhoid fever occasionally attacks persons on ship-board, but then it is to be recollected that in the instances abovementioned the passages of the vessels were commonly very short, sometimes not over a few days, and that the remitting fever generally prevails more or less in the summer and fall, in the neighbourhood of the ports whence they sailed. These ports were all south of Philadelphia, viz. Smyrna, Georgetown, Norfolk, Charleston, Savannah, and Mobile. Not one patient with remitting fever was admitted from on board a vessel trading with any of the more northern ports, or from any more distant place; so that it admits of no reasonable doubt that the patients in question contracted the disease in the vicinity of the ports from whence they had just previously sailed, and where the usually admitted causes of marsh malaria are, I believe, exceedingly rife. The circumstances under which those employed in digging the canal near Columbia were placed, were such as to leave but little doubt of the influence of such malaria upon them.

During the whole summer the weather was exceedingly hot and dry, more uniformly so, indeed, than had been known for a great number of years.

The whole of the admissions took place between the 13th of August and the 17th of October, or during the space of about two months. During the other part of my term, also about two months, not a single case was admitted, except perhaps one which was considered as quotidian intermittent. After the expiration of my term to the end of the year, only one or two more cases were admitted. In fact it is uniformly true that the admissions for remittent fever into the Pennsylvania Hospital are almost exclusively confined to the months of August, September, and October, of each year. Typhoid fever, on the contrary, is much more equally distributed throughout the different seasons of the year, and, according to some, is more frequent between October and April than between April and October.

Of the influence of occasional causes in the development of the disease, I can say but little. In the case of one or two sailors, it followed a severe exposure to cold and wet, and the labourers from Columbia must necessarily have been exposed to a burning sun during the day, alternately with the damp and chilly air of the early morning and evening, whilst at the same time they were unaccustomed to the climate.

The average age of the 20 cases in question was a fraction under 25 years, the youngest being 16 and the oldest 44. There were 6 between 16 and 20, 10 between 20 and 30 inclusive, and 4 over 30 years of age. It does not, however, necessarily follow, that because far the larger proportion of cases are found to occur between the ages of 16 and 30, that there is any peculiar predisposition at that period of life to contract the disease, although that may be very probable, since the great majority of those exposed to its causes and likely to become patients in the hospital are of the age mentioned.

The constitution of the patients appeared to be generally good, and one only is noted as being the subject of any chronic disorder.

Before proceeding farther, I will observe that the disease presented itself under three very different forms, that of common remittent, pernicious remittent, and a high grade of bilious remittent, approaching in several respects to yellow fever. Of the first there were 15 cases, of the second 4 cases, and of the third only 1. I shall not stop to notice the distinctive features of these forms, but proceed at once to lay before the reader the histories of the two fatal cases, in which post-mortem examinations were obtained, and then give a general description of the organs as presented in these, and the 5 fatal cases which occurred subsequently, comparing the anatomical descriptions with those of some other fevers. I shall afterwards study in the same manner the symptoms, &c., of all the cases, and consider some questions, which the facts before me may serve to elucidate.

Case I.—Benjamin Southwick, a sailor, aged 29, arrived at Philadelphia on the last of August, 1838, four days from Savannah, Georgia. Three days before his arrival he had been exposed in a heavy gale accompanied with much rain, and his clothes wet through. He was taken on the evening of the 31st of August, having previously felt heavy in his head, with a chill, accompanied by pain in the head and back. The chill was slight, did not last long, and during the night he perspired a good deal. On the following day, towards evening, he felt somewhat relieved, but the next day, September 2d, he had a severe chill, followed by high fever, great heat and thirst. On the 3d he was admitted into the Hospital. At that time his skin was hot and dry; pulse frequent, tense and full; headache, stupor, and injection of eye; great tenderness at epigastrium; bowels had been frequently opened. He took the effervescing draught, cold was applied to the head and six cups to the back of neck. Low diet.

September 4th.—Slept well last night; mind clear, no dulness; senses perfect; no noise in ears; no headache; some yellowness and injection of conjunctiva; a little moisture about forehead; skin warm and slightly yellow; pulse 72, moderately full and strong; no cough; tongue red, moist at edges, dryish in centre, with a whitish fur posteriorly; no appetite; vomiting of a greenish fluid; oppression and some pain across hypochondria, which are tender on pressure; belly generally supple, no metorism; bowels open twice this morning. ℞.—Cups to epigastrium; cold barley water for drink.

Evening.—High fever; skin hot and dry; tongue dry; frequent vomiting; no stupor or delirium. He was directed to take iced drinks and the effervescing draught; and to have a mustard poultice applied to the stomach; also calomel, gr. ¼; opii gr. ⅛, every two hours.

5th.—Has taken four of the pills of calomel and opium. Head hot; some stupor; no delirium or headache; eyes injected; hearing good; respiration frequent and laboured; percussion of chest and respiratory murmur natural; tongue dry and hard; irritability of stomach diminished; no vomiting to-day; little or no tenderness at epigastrium; abdomen distended, tympanitic; bowels opened slightly once this morning; skin warm and slightly moist; yellowness very marked, and of a deep shade; pulse full, moderately strong and a little jerking. The cold drinks and the cold to head were continued, and the following powder directed, viz.: calomel and jalap, āā. gr. x; cups to head if cephalic symptoms are not relieved.

Evening.—Stupor continues; some incoherence; great tenderness at epigastrium; does not complain of sensation of heat there; tongue dry, chapped and smooth; pulse more full. Head to be shaved and cold applied; cold drinks as before; also a tablespoonful every hour of the following mixture, viz.: citrate of potash, ʒiij, sulphate of magnesia, ʒv, water, &c., ℥viij.

6th.—Dozed during night but had no sound sleep; did not talk in his sleep; slight wandering but no positive delirium; answers questions readily and without hesitation; no headache; no noise in ears; senses perfect; pupils small, conjunctiva very yellow; slight bleeding at nose; respiration scarcely 20 in the minute, full; oppression at præcordium; great tenderness at epigastrium, which is distended and resonant from gas; has thrown up his medicine several times; the matter last vomited of a light green color; bowels opened once by injection; stool yellowish brown; skin supple, of natural temperature, of a decided yellow colour; pulse 84, less full and strong; patient lies on his back, quiet. Continue cold drinks and repeat mustard plaster to legs; a blister to the epigastrium. Discontinue the mixture of citrate of potash, and take blue mass, gr. iij; Rhei. gr. vi, one every four hours.

Evening.—The blister has drawn; oppression at præcordium increased; respiration laboured; abdomen distended, tympanitic; mind depressed, slightly wandering; hearing good. The cold drinks were continued and an ounce of tinct. of assafœtida directed by injection.

7th.—Eyes very yellow and pupils contracted; oppression at præcordium continues; vomiting of a light greenish fluid; skin warm, deep yellow; pulse 100 to 106, more corded and less full; has taken but two of the pills ordered yesterday, as they irritated the stomach. Discontinue pills and repeat assafœtida injection and cold drinks.

8th.—Much the same; great dejection of mind with slight stupor, but no delirium; hearing good; no subsultus; lies on back; yellow color of skin still deeper than before; hiccup occasionally yesterday and this morning, on which account an injection of a few drops of oil of amber have been administered. Ordered cold drinks with ice; repeat oil of amber if the hiccup returns.

He died between 11 and 12 o'clock on the same night; his consciousness being perfect to the last.

Autopsy 17 hours after death. *Head.*—Membranes easily detached from the surface of the convolutions; no infiltration under the arachnoid; considerable deep injection of pia mater, especially between the convolutions, soon becoming bright upon exposure to the air; on the upper middle surface of the right hemisphere there is a red patch about the size of half a dollar, owing apparently to a slight effusion of blood into the cells of the pia mater; between two of the convolutions and imbedded in pia mater were found two rounded bodies about the size of small peas, of a yellowish white colour, which when cut into presented a cavity filled with a friable yellowish white substance; substance of brain firm and of natural colour; cortical substance very distinct; medullary presents a moderate number of red dots on its cut surface; central portions not at all softened; surface of ventricles of a decided yellow colour; no fluid in them; thalami and corpora striata natural; nothing else remarkable; cerebellum natural.

Chest.—No adhesions; both lungs supple and crepitating without tubercles or other organic lesion; when cut into, the upper lobes present a yellowish tinge, and when squeezed a spumous fluid of the same colour issues from them in small quantity, otherwise natural; lower lobes of a deep reddish brown, containing a large quantity of red spumous fluid, not at all granulated; texture rather firm, but natural. Heart rather large, but otherwise natural; valves supple, of a yellow colour as well as aorta, which is bright yellow.

Abdomen.—Liver of natural size, flabby, of a bronze colour, which becomes livid in the small lobe; internally of a uniform light bronze colour; acini distinguishable by a slight elevation, but no difference of colour in the two substances; gall bladder filled with a very dark almost black bile, perfectly fluid and thin; a very thin layer of it showing an orange colour. *Spleen* four or five times its natural size, very much softened, pultaceous, brownish black, looks somewhat like clotted venous blood. *Stomach* rather contracted, containing a small quantity of a thin dark coloured fluid. Mucous membrane thrown into folds along the great curvature; its colour, except for a few inches near the pylorus, was bister with a tinge of olive, especially along the great curvature, and with the intermixture of a red tinge in the great cul-de-sac; where the alteration of colour exists, it is softened, friable, and with difficulty raised from the submucous tissue to which it seems to be more adherent than natural; its thickness not materially altered; near the pylorus where it is pale, it is easily raised into long strips, and is of natural thickness. The mucous membrane of the *duodenum* a little softened, pale, with a slight greenish tinge, otherwise natural; glands of Brunner numerous in same part. The mucous membrane of the *ileum* was also generally pale, with a decided greenish tinge, and some red injection of vessels towards its lower part for the space of a few inches; its thickness was natural; no softening; is easily raised in strips. The glands of Peyer distinct and perfectly natural. Jejunum and upper part of ileum not opened; large intestine healthy; kidneys not examined.

In the above case the disease, preceded by heaviness in the head, commenced in the evening by a chill, accompanied with pain in the head and back, followed by free perspiration during the night. On the following day towards evening the symptoms abated somewhat, but on the next or third day of the disease, the chill returned with more violence, followed by high fever, which continued on the 4th, the day of his admission, at which time the epigastrium was tender on pressure. On the morning of the 5th, the pulse was nearly natural and the skin warm, whereas in the evening, being an interval of two days from the second chill, the fever was high, thus clearly showing its tertian type. On this day there was also vomiting of a greenish fluid; the conjunctiva was yellow and injected, and the skin slightly yellow. His mind was clear and the senses perfect. During the remaining period the yellowness of the skin became more and more marked, the oppression and anxiety were generally very great, vomiting of greenish fluid frequent; his mind became much dejected, with some wandering and stupor. At times the tenderness of the epigastrium was excessive, with distension and gaseous resonance in the same part. He died on the 9th day. At the autopsy, nothing remarkable was found in the chest or head beyond the injection of the pia mater, the yellow colour of the surface of the ventricles, of the valves of the heart and aorta, and of the fluid pressed from the upper lobes of the lungs. The liver was flabby, of a bronze colour, the two substances blended together so as to be scarcely distinguishable; the gall bladder filled with dark bile; the spleen very much enlarged and softened, the stomach presenting evident marks of recent inflammation of its mucous coat; the glands of Brunner in the duodenum numerous, whilst the lower part of the small intestine, together with the large, were in a natural condition, the glands of Peyer being perfectly healthy. This is one of those cases of bilious remittent which, in some of their features, resemble so strongly the yellow fever. The most prominent points distinguishing it during life from the latter disease, were the evident tertian or semi-tertian type of the fever during its first stages, the absence of black vomit, and the less rapid course of the symptoms. After death the liver, instead of the pale and yellowish colour which it presents in yellow fever,* was darker than natural, of a bronze or livid colour; the spleen very much enlarged and softened; whereas in yellow fever, this organ is very frequently natural, and is rarely enlarged and softened to a great degree. The stomach contained a small quantity of dark coloured fluid, but very different from the black matter of yellow fever, judging from the descriptions of the latter. Admitting then the above case to be one of bilious remittent, and comparing the symptoms with the lesions found after death, how shall we explain the former by the latter? Doubtless the irritability of stomach, the anxiety, and oppression at the præcordium, tenderness, &c., are mainly referrible to the inflamed condition of the stomach, the intensity of some of them probably enhanced by the enlargement of the spleen and altered condition of the liver; to which latter the yellowness of the skin, conjunctiva, &c., must be referred. The gastric symptoms however, the anxiety and oppression, did not assume anything like their greatest intensity until about the 6th or 7th day. Whether or not the inflammation of the stomach was present at the commencement, it is impossible to say, as the presence or absence of gastric symptoms during the three days previous to his admission, are not noticed. But supposing it to have existed, its severity certainly would not seem to have been in proportion to the intensity of the general symptoms. Besides it affords no explanation of the periodicity of these symptoms, the recurrence of the chill followed by fever, &c., at an interval of 48 hours from the first, and the subsequent exacerbation after a like interval. These are alike inexplicable by means of the other alterations observed, viz. of the liver and spleen; or at least we are unable, in the present state of our knowledge, to assume as even probable, their dependence upon either of these alterations as their cause.

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* In drawing comparisons between remittent and yellow fever, I shall make use of the description of the latter as it occurred at Gibraltar, by M. Louis, as being the most complete account, particularly in reference to the post mortem appearances, of any epidemic of that disease with which I am acquainted; their applicability to other epidemics also having been subsequently confirmed by observation in the West Indies.

The alteration of the liver, however, is remarkable from its peculiarity, and, as I think I shall be able to show as we proceed, well worthy of attention. Its nature is not easily determined, for besides the alteration of colour and consequent blending together of the two substances, with perhaps slight development of the acini, nothing else remarkable was observed. But even if we suppose the abundant secretion of bile to be sufficiently indicative of a state of active hyperæmia, or congestion, this will not explain the peculiar appearance of the organ, as congestion frequently occurs in other diseases, when no such peculiarity of aspect is observable. That the alteration in question was not owing to inflammation is rendered probable, when we reflect that it was uniform throughout the whole organ; that the natural red colour, instead of being increased, had disappeared; and that the diminished consistence amounted to nothing more than that state of general flabbiness in which many of the large viscera are frequently found, where no suspicion of inflammation can exist. If the symptoms are not fully explicable by the condition of the organs, neither is the cause of death, which certainly cannot be accounted for by the alteration of the stomach and spleen. The influence of that of the liver may have been considerable, though it is difficult to appreciate its amount. The state of the blood was unfortunately not noted, and to the alterations of this fluid, so frequent in remitting fever, we must no doubt look in part for an explanation of the fatal termination in some cases.

Let us observe, in conclusion, that the anatomical character of typhoid fever, viz., a lesion of the glands of Peyer, was wanting in the above case, in which on the other hand was found a peculiar alteration of the liver not met with in that disease.

The subject of the following case I did not see during life, and am indebted to Dr. Smith, then resident physician, for the following note of the symptoms.

Case II.—Hugh Aken, ætat. 20, arrived 10 days ago from Savannah. The captain and three others sick. Attack came on after getting on shore, with pain in the back, limbs, &c. Recollects no chill, but constant perspiration; no cephalalgia, or vomiting. Admitted Oct. 1st, 1838; 11 A. M. Prostration extreme, extremities cold and dry, body cool and moist; pulse scarcely perceptible, very rapid; face bronzed; tongue nearly natural. ℞. Heat to extremities; sinapism to legs—punch—also, quinine g. j., to be taken every two hours.

Evening.—Mind less dull than in the morning. No cephalalgia; eyes dull and injected, pupils dilated, contracting with light; tongue moist and slightly furred, no epigastric tenderness; pulse a little stronger, considerably over 160—body hot and dry, extremities cold. Ordered to be put into a warm blanket—continue punch, and give gr. ii of quinine every hour.

9 o'clock.—Extremities cold and clammy, cold and heavy sweat on body. Pulse scarcely perceptible—legs not affected by sinapisms. Is apparently in the cold stage, but there are no rigors; he was directed to have gr. iv, of quinine by injection, and the same quantity by the mouth half an hour afterwards, to be repeated every three hours. About 2 o'clock on the following morning, Oct. 2d, he died.

The autopsy, at which I was present, was made in the afternoon with great care, but unfortunately, owing to my not having made any note of it until a considerable time afterwards, I can only give a general description of its prominent features. The liver was enlarged, softened, and more or less of an olive or bronzed colour; the gall bladder full of very thick, tenacious, dark coloured bile; the spleen enlarged, and very much softened. Except evidences of congestion, the other organs presented nothing remarkable—of the condition of the mucous membrane of the stomach, however, I cannot speak positively. The glands of Peyer were healthy. Head not examined. Imperfect as is the history of the above case, and short as was the period during which the patient was the subject of medical observation, we can have no difficulty in recognizing in it an example of that form of remittent fever which is usually styled congestive, or pernicious remittent, and which differs very remarkably in some of its features from that presented in the previous case. Of these differences I shall have occasion to speak more particularly when describing the symptoms. The general character of the post mortem appearances, however, was very similar in the two cases, if we except the stomach, about which nothing positive can be said: I may state, however, that this organ could hardly have presented evidences regarded at the time as indicative of decided acute inflammation, as it is distinctly stated in the notes which I made some time afterwards, that nothing of a positive character other than marks of congestion, and the alteration of the liver and spleen, already mentioned, was found. If, then, the symptoms and cause of death are not fully explained by the post mortem appearances in the former case, still less so are they in the present instance.

I shall now go on to give a general description of the condition of the organs as observed in the seven fatal cases, two of which have just been detailed. Of the remaining five, one occurred in 1839, three in 1840, and one in November of that year, a short time subsequent to the expiration of my term of duty, and for the notes of which, as already stated, I am indebted to Dr. Stillé, then resident physician.

Brain.—This organ was examined in only 5 of the cases. The subarachnoid effusion was either entirely wanting or moderate, except in one case, where there was a considerable quantity of reddish serum. In the same case the ventricles contained an ounce of bloody serum, whilst in two of the others they were empty, in a third nearly so, and in the fourth contained scarcely a drachm of fluid. In one the walls of the ventricles were of a yellow colour. The pia mater was deeply injected in one case, in which also there appeared to be a slight effusion of blood into the cells in a small circumscribed space; its veins much distended posteriorly in another. The cortical substance was of a deep shade in two cases, and in none is it mentioned as being paler than natural or presenting other alteration. In two cases the medullary substance was natural, in a third it felt pasty without giving the sensation of softness, whilst in a fourth it was soft and pasty, being at the same time dry and of a milk white colour with few bloody points. In a fifth its colour was a dirty white, mixed with a faint reddish brown, its consistence natural, with the exception of slight central softening. The same condition was presented by the cerebellum, which was natural in three other cases; its condition not noted in the fifth.

The above alterations are similar to those found in other acute diseases, and must be regarded as slight and comparatively unimportant, if we except the individual in whom there was large bloody effusion in the ventricles, &c., and whose case will be reported farther on.

Respiratory Apparatus—Pleuræ.—Old adhesions were found in a few cases, but very limited in extent. In two instances there was effusion in each pleural cavity of about half a pint of a reddish brown or bloody fluid. In both of these cases the heart was flaccid, its lining membrane deep red or reddish brown, and in one the pericardium also contained several ounces of bloody serum. The lungs, on the contrary, in one of these cases, were healthy, in the other, very dark, deeply congested, without hepatisation. It is most likely then that the pleural effusion was the result rather of an altered condition of the blood, combined, perhaps, with some softening of the tissue, than upon obstruction to the pulmonary circulation. That pleural effusion was generally absent or slight in the other cases I have little doubt, but its absence is not positively noted.

Lungs.—Of the 6 cases in which these organs are particularly described, hepatization was found in one case only, and that at the summit merely of the middle lobe. They were generally more or less supple and crepitant, sometimes dark posteriorly; in one instance yellowish in the upper lobes, but deep reddish brown in the lower, in which case also spumous fluid of corresponding colour, but most abundant in the lower lobes, issued from the several parts when squeezed. Indeed these organs presented nothing particularly remarkable, except in one instance (Case III), where they were highly congested, their colour throughout nearly their whole extent being very dark, almost black, and the tissue but slightly crepitant, though not granulated or very easily penetrated.

The condition of the lungs then was much the same as in most other acute diseases, not especially seated in these organs. It is worthy of remark that in no instance were there any of those hæmorrhagic masses frequently occurring in the yellow fever according to the description given us by M. Louis, whilst, in both, hepatization was very rare.

Circulatory Organs.—The pericardium contained a small quantity of serum in one case, and several ounces of bloody serum in another.

Heart.—This organ was flabby in 3 of the 6 cases in which it is particularly described, and combined with this flabbyness there was diminished consistence at least in two cases. In the same three cases its lining membrane was reddish brown, deep red or violet; in two of these the colouring being deepest on the right side and in the neighbourhood of the valves, and extending into the pulmonary artery and aorta. In the other 3 cases the heart presented nothing remarkable; in all, its valves were supple, and in one case of a yellow colour. The aorta was of a bright or lemon yellow in two cases.

In the 5 cases in which the state of the blood is mentioned, this fluid was found in the cavity of the heart. In one case there were black coagula mixed with red serum; in the others fibrinous coagula, soft in two, semi-transparent and greenish in another, and generally small. No large firm fibrinous coagulum was found in a single instance. Although it is impossible to say at present whether or no the blood in remittent fever presents any characters which are absolutely peculiar, it is perfectly evident that it is the seat of morbid changes which deserve especial attention.

The following case is remarkable for the presence of most of the lesions hitherto described.

Case III.—Edward Long, ætat. 24, seaman, was admitted September 21st, 1839. Attacked about the 9th, having got inside Sandyhook, after a passage of five or six days from Georgetown, South Carolina, to New York, which place he left on the 12th for Philadelphia. According to the account of his friends, he has had a chill every day, being better in the intervals, though very weak. On the 19th, two days before admission, he was quite stupid for a time after the chill, which was not near so severe on the following day. On the next, the chill again returned, and when brought in, 4½ o'clock P. M., the patient was in a state of perfect stupor; skin hot; pulse rather weak; pupils contracted; violent contortion of both eyes to the left side. About nine ounces of blood were taken by cups, when his pulse became suddenly thready. Sinapisms were applied to the legs, under which he reacted, and a purgative injection was given, which operated freely. The stupor continued, accompanied with stertorous breathing, and, at 9 P. M., I saw him, and took the following note.

Stupor profound; pupils small, very slightly sensible to light; is lying on his back motionless, with the head turned to the left side; deviation of the mouth to the same side; face puffy, of an earthy paleness; pulsation of carotid very strong; pulse 102, moderately strong, vibratory; skin hot, bathed in free perspiration; breathing laboured, 40 per minute; respiratory murmur pure in front; beating of heart strong; dulness on percussion over left false ribs laterally and somewhat anteriorly; spleen distinctly felt in left hypochondrium; pressure over right hypochondrium occasions a slight groan, not so elsewhere; meteorism considerable, especially below the umbilicus; no vomiting; one stool shortly after injection. A vein being opened, the pulse at first fell, when the flow of blood was stopped; after which it rose, and, the vein being again opened, became fuller, slower and stronger; 24 ounces of blood having been drawn, the pulse again fell, when the bleeding was stopped.

Ordered spirits of turpentine ℥i in some salt and water, as an injection; cold cloths to the head.

He died on the following morning about 2 o'clock, between nine and ten hours after admission.

Autopsy 32 hours after death. Embonpoint moderate; cadaveric rigidity very great, about the same on both sides.

Head.—Considerable serous infiltration in cellular tissue under scalp; unusually strong adhesions between the dura mater and arachnoid superiorly, near the margin of longitudinal fissure, as much as an inch from which are found a number of granulations, resembling glands of Pacchioni; considerable infiltration of reddish serum under arachnoid; pia mater very easily separable from convolutions, its large veins posteriorly very much distended; substance of hemispheres generally firm, its medullary portion of a dirty white, mixed with a faint reddish brown tint; corpora striata, thalami, and the central portions generally, forming the walls of the ventricles, somewhat softened; about an ounce of bloody serum in lateral ventricles; cerebellum less firm than usual, its medullary portion presenting the same aspect as that of the brain.

Chest.—Heart of usual size, flabby, pale and softened, its walls easily penetrated by the finger; internal surface of the auricles and that portion of the ventricles bordering upon them, of a reddish brown colour, as also the valves, which were otherwise healthy, unless it may be those of the pulmonary artery, which escaped examination; the blood in the left cavities but slightly coagulated, a small soft yellow fibrinous coagulum in the right. Several ounces of bloody serum in the cavity of the *pericardium;* six or eight ounces of a dark reddish-brown serum in the cavity of each *pleura;* few or no adhesions. *Lungs* very dark, almost black, externally; same internally, except a small portion anteriorly and near the base, which is reddish brown; tissue not granulated, not very easily penetrated by the finger, slightly crepitating; no tubercles or other organic lesion.

Abdomen.—A few ounces of dark bister coloured thin fluid in the cavity of the peritoneum to the right of the spine, and just below the liver; none on the left side; omentum light brown; peritoneal surface smooth, without adhesions. *Liver* of moderate size, of a bronze colour bordering upon olive; internally the colour of the cut surface is uniformly the same, the distinction of the two substances lost. Gall bladder contracted; bile fluid, of a reddish orange colour. *Spleen* five or six times its natural size, very much softened, of the colour of dark venous blood, almost black internally. *Stomach* large. Mucous membrane thrown into folds, which were coloured of a deep orange yellow, elsewhere colour natural; its thickness natural except in a space about the size of the palm of the hand, in the great cul-de-sac, where it is thinned and softened; its consistence also is elsewhere natural, except that it is rather friable. In the *duodenum,* the glands of Brunner were exceedingly numerous. Throughout the rest of the small intestine nothing remarkable was observed; the glands of Peyer were healthy; the orifices of the crypts very marked, of a dark slate colour. The large intestine presented nothing worthy of note; its mucous membrane was easily raised into long strips. A superficial examination of the mesenteric glands showed no appreciable enlargement of them.

It may be doubted whether the above case ought not to be classed among double tertian intermittents, rather than remittents, a question which cannot be positively determined, as the patient did not come under observation until within a few hours of his death, and the account of his symptoms previously to admission is not such as to enable us to say whether the febrile paroxysms were followed merely by remission, or a distinct intermission. I have not hesitated, however, to introduce the case here, as the two forms of disease are, I think, in their essential nature the same, an opinion which the case before us, if it were really a pernicious intermittent, and not remittent, strongly supports, as the liver was found to present the same peculiar alteration as in the preceding cases, the spleen very much enlarged and softened, the glands of Brunner in the duodenum very numerous, the glands of Peyer natural, the intestinal canal generally and the other organs healthy, or without any lesion especially characteristic of another disease. The above case is remarkable for the number of analogous secondary lesions which it presented, viz: the bloody serous effusion beneath the arachnoid, in the cavities of the arachnoid, pleura and pericardium, the deep colour of the lungs and of the lining membrane of the heart, which was flabby, pale, and softened; to which may be added the bister coloured fluid found in the peritoneal cavity to the right of the spine, and bordering upon the liver; the last from its position being, most probably, altogether a cadaveric lesion.

That the deep red or violet colour of the lining membrane of the heart is in great measure a cadaveric phenomenon, dependent upon a previous alteration of the blood, and of the texture of the organ, is now perhaps generally admitted, and the facts we are considering confirm the opinion, for both the conditions were united in every case where the appearance in question was presented. On the other hand, it was absent where the heart was firm, notwithstanding the liquidity of the blood, thus showing that the latter condition alone was not sufficient of itself to produce it. That the same general conditions, viz., alteration of the blood, and of the texture of the part, exercised an important influence in the production of the effusions of red serum is pretty evident from the fact of their being found only in those cases where the heart was flaccid.

Abdomen.—A few ounces of a bister coloured fluid were found in the peritoneal cavity in one case; in another a part of the peritoneal coat of the gall bladder, and of the neighbouring folds of the small intestine were of a rose colour, and covered with false membrane. The omentum, and many of the folds of the small intestine are noted in one case as olive coloured, there being no effusion in the cavity; in another the intestines were of a dingy ash colour, and pasty feel.

Liver.—Enlarged in three cases, and in one of them to a great degree, in the others it was of natural or moderate size. The consistence of the organ appears to have been generally diminished, being flabby, or softened, or both, in four cases, a little soft in a fifth, and moderately firm, but still readily penetrated by the finger in a sixth; in the seventh the consistence is not mentioned.

The colour was nearly the same in every case, but very different from natural. In most of the cases the liver is described as being of the colour of bronze, or a mixture of bronze and olive, in one as a dull lead colour externally, internally bronzed with a reddish shade; in another as between a brown and an olive, the latter predominating; and finally, as a pale slightly greenish lead colour, with a tinge of brown, in one instance. Few things are more difficult than a description of colour. The most correct idea of that before us would perhaps be conveyed by stating its predominant character, the same in every case, to be a mixture of gray and olive, the natural reddish brown being entirely extinct, or only faintly to be traced. This alteration existed uniformly or nearly so throughout the whole extent of the organ, except in a single instance, where a part of the left lobe was of the natural reddish brown hue. As the alteration of colour pervaded both substances, the two were frequently blended together, and the aspect of the cut surface remarkably uniform. In one case, however, there was a marked distinction of colour, the olive being predominant in the parenchyma, the brown in the acini. Of the four cases in which these characters are mentioned, the cut surface is described as smooth in three, of a shagreened appearance, and rough in the left lobe, in the fourth. This last character was evidently dependent upon hypertrophy of the lighter coloured substance, which existed also in another instance, both cases, however, being examples of a very protracted form of the disease.

The nature of the lesion of the liver above described, characterized essentially by a peculiar alteration of colour, is not easily determined. That it is the result of inflammation will hardly be contended, and even if attended with congestion, (which I think very doubtful,) this could not account for it, as congestion is frequently present in other diseases where no such alteration of colour is observable, and where, on the contrary, its effect is to produce a deeper red. Some, perhaps, will look upon it as dependent upon the infiltration of bile into the tissue of the organ, but still it will at once be perceived that this presupposes a peculiar alteration of the bile and liver, inasmuch as the appearance presented is not found in other diseases, at least so far as I am aware. In saying that this lesion is found in no other disease, I wish to be understood as excepting those cases of pernicious and other intermittents, which prove fatal in the early stage, or before giving rise to well developed cirrhosis, abdominal effusion, &c. Indeed I think it highly probable that the same alteration of the liver will be found to exist in intermittents which thus prove fatal, an opinion confirmed by the case last detailed. (Case III.) In speaking, therefore, of this alteration being peculiar to remittent fever, I wish to be distinctly understood as not excluding intermittent fever, which in my opinion is essentially the same disease.

The lesion in question, then, being peculiar to the disease before us, and the only one which is so, (all the other lesions being common to it and other diseases,) and at the same time being found, as already observed, in every case, we are obliged to admit that it constitutes its essential anatomical characteristic, or at least that such is the conclusion to be derived from the cases before us. Their number, I am aware, is insufficient to establish such a point conclusively, and it therefore remains for future observers to determine whether or no the lesion we have described belongs to the disease under all circumstances. That such will be found to be the case, I confess, seems to me very probable, when I recollect that the cases we have been examining were distributed over three successive seasons, and originated, not in a single locality, but in different and widely separated places, and also that by a reference to the description of authors, it is apparent that a similar condition of the liver has been frequently observed by them, without, however, attracting that attention which it seems to me it demands. Thus we find it stated, in a dissertation on remittent fever, recently published by Dr. Shapter,* and composed no doubt after a comparison of the description of various authors, that "the liver is found enlarged, injected, and softened in structure, and is generally of a *dark*, sometimes of a *gray* colour."

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* See Tweedie's Library of Practical Medicine, vol. I.

It has been already mentioned that the characteristic alteration of the liver was, in two protracted cases, combined with a general development of the acini or lighter coloured substance. The following is the history of the case in which this was most marked.

CASE IV.—Alexander Hamilton, ætat. 28, native of Massachusetts, sailor, of temperate habits, was taken sick, August 9th, 1840, on board ship, two days after leaving Mobile. He had previously enjoyed good health. Attack commenced with a chill, followed by fever, pain in the back and head, and vomiting, so that he was obliged to go to bed, and was confined to his birth during the remainder of the passage. During this time he used no medicine, (there being none on board,) and was obliged to take the common fare of sailors. He was brought to the hospital in a carriage on the 1st of September. On admission, the odour from his body was so strong, the skin harsh and covered with filth, that he was put at once into a warm bath. Emaciation very marked; features contracted; expression dull and anxious; voice feeble; skin of a dingy sallow colour; spleen distinctly felt under left false ribs, where there was soreness as well as in the right hypochondrium; pulse feeble. The spirits of mendereri were prescribed for him, but, after a few doses, there was so much sickness of stomach, the matter vomited being green, in parts a little ropy, and in quantity about half a pint, that it was omitted; the effervescing draught substituted, and a blister applied to the epigastrium. Diet, barley water and gruel. No diarrhœa. During the first ten days, his general condition was as follows. Emaciation progressive; memory defective; intellectual faculties feeble; no delirium or incoherence; answers without hesitation; sight and hearing seem to be unaffected; some headache at first; no epistaxis; tongue pale, the paleness progressively increasing, generally dry posteriorly and in the centre; thirst considerable; pulse always feeble, its frequency and volume varying considerably, sometimes connected with increased heat of skin. These febrile exacerbations were more marked on certain days than others, but whether there was any regularity in this respect, I cannot certainly say. Skin generally rather harsh; no cough; no diarrhœa; bowels occasionally opened by enemata; vomiting of a glairy thin fluid occasionally; tenderness of epigastrium; abdomen rather retracted; no rose coloured spots. He took a moderate quantity of wine whey, with occasionally a little opium. On the 9th, some chicken soup and calf's foot jelly were directed, which he relished very much for a few days and then took with indifference. About this period diarrhœa came on, the stools at times involuntary, and the urine, which was high coloured and of a strong odour, was drawn off by the catheter. The emaciation continued to progress, the skin became more shrivelled, and the yellow tint more marked, with slight wandering of mind and trembling of hands. He lay with his legs drawn up, sometimes on the side and sometimes on the back. There was generally more or less soreness of the epigastrium, and a few days before his death, upon careful examination, it was found that the percussion was dull below the false ribs on the right side and near the median line, in a space about two inches in height by rather less in breadth, where the resistance was much greater than on the corresponding part of the opposite side, and the tenderness also very great, but no distinct tumour was felt. During the last few days of his life, no new symptoms appeared; the strength failed; the skin became of a more leaden aspect; there was no recurrence of vomiting; stools involuntary, with retention of urine; slight nocturnal delirium, one or two nights before the fatal termination, which took place on the 20th of September, forty-three days from the commencement of the disease.

Autopsy—September 21st.—Great emaciation; no œdema, except in perineum and scrotum, which was much distended by effusion of air and serum.

Brain pale externally, especially over anterior lobes; posteriorly veins somewhat injected. Arachnoid easily raised, transparent, though slightly injected, and, over the anterior lobes, elevated in spots by small air bubbles, giving it a granular appearance. The white and cineritious substances distinct, throughout firm and of natural colour; scarcely a drachm of fluid in the lateral ventricles, none elsewhere. Cerebellum natural.

Chest.—Half a pint of bloody fluid in each pleural cavity; slight old adhesions on left side. *Lungs* perfectly supple; more or less emphysematous throughout; pale in the upper, and reddish brown in the lower lobes; no tubercles or other lesions. Heart softened and extremely flaccid, its walls of natural thickness. Upon removing it from its attachments, a quantity of fluid blood issued; the right cavities contained a very small quantity of thin, red, watery fluid, with a very small fibrinous coagulum; their lining membrane of a deep red colour throughout, approaching to black near the valves; same appearances presented in left cavities, but less marked; valves supple and otherwise natural; the lining membrane of the aorta and pulmonary artery, and their valves, which were supple and otherwise natural, had the same red colour; surface of this membrane smooth.

Abdomen.—All the solid viscera flaccid and much softened. The peritoneal covering of part of the gall bladder, as well as that of some of the intestinal folds in its vicinity, of a rose colour; the folds glued together by a false membrane, which was also effused upon the surface of the gall bladder. *Stomach* considerably enlarged, containing about three ounces of dark, dirty brown fluid. At its larger extremity the parietes felt thin; the mucous membrane was smooth and shining; a portion of it dyed red in large patches and along the course of the vessels; raised without difficulty in short strips; its thickness not remarkable. The lining membrane of the rest of the organ was of a pale slate colour, slightly corrugated along the great curvature, and, everywhere mamelonated, most markedly so towards the pylorus; its thickness and firmness evidently increased, more easily raised into strips than natural; no vascular injection or ulceration. The inner surface of the *duodenum* rough, owing to the development of the mucous follicles with which it was thickly studded for about eight inches; its mucous membrane softened and thickened, as was also that of the whole small intestine, which presented nowhere any ulceration or injection, and, in its lower part, was remarkably pale. In the upper portion were a few diffused blackish patches, over which the mucous membrane was thinner and softer than elsewhere. Glands of Peyer distinct, neither elevated nor injected. The solitary glands unusually developed in the last two feet of the ileum. The large intestine presented nothing worthy of note. *Liver* of natural size, 11 inches long by 9 broad; its proper coat readily raised up. The surface of the liver, when deprived of its coat, presented a shagreened appearance, evidently owing to hypertrophy of the lighter coloured substance; and was of a pale, slightly greenish lead colour, with a tinge of brown. A section presented the same characters, except that the shagreened appearance was less evident, the distinction of colour between the two substances being more slight. This condition of things uniform throughout, except that it is most marked in the left lobe, where the surface is rough and the natural reddish brown hue nearly extinct. *Gall-bladder* contained a large quantity of thin bile, mixed with a grumous deposit, some of which adhered to the inner surface of the organ, whose mucous coat was thin, soft, readily detached from the adjacent coat, and devoid, in part, of its honeycomb appearance. *Spleen* exceedingly soft and pulpy; of the colour of lees of red wine; 7 inches in length by 4 in breadth, and 2 in thickness. *Kidneys.*—Their substance easily broken up; their cut surfaces presenting an ecchymosed appearance, particularly along the boundary between the cortical and tubular portions, and most marked in the left kidney. The bladder was distended by at least a pint and a half of deep coloured urine; its muscular coat greatly developed. The disease here commenced with the usual symptoms, chill followed by fever, pain in the head and back, and vomiting, and was no doubt aggravated during the first three weeks by bad diet and the want of proper attendance. He was admitted into the hospital on the twenty-third day of his disease, and, during the remaining three weeks, the remissions were comparatively obscure; the emaciation progressive; the skin at first sallow, becoming more and more yellow; the stomach irritable, with tenderness at the epigastrium; enlargement and tenderness in the region of the spleen, with absence of diarrhœa, until within the last ten or twelve days, and with only slight nocturnal delirium for a day or two before his death. Upon examination, the same general appearances are found as in the preceding cases, the spleen enlarged and softened; the stomach presenting evident marks of inflammation; the liver of a pale slightly greenish lead colour, with a tinge of brown; the acini at the same time being developed so as to give it a shagreened appearance. This latter must be regarded as commencing cirrhosis and is particularly interesting, when we consider that it was found only in those cases where the disease was protracted, or at most was but faintly traceable in one or two others, and that fully formed cirrhosis is so frequently met with in those who die after suffering for a long time from the effects of marsh fevers. These considerations give a new importance to the primary lesion of the liver which I have described, inasmuch as they seem to show that its natural tendency, when long continued, is to pass into cirrhosis, and thus lay the foundation of some of those chronic disorders to which the disease frequently gives rise.

The inflammation of the gall bladder and the peritoneal covering of the neighbouring intestinal folds, was evidently recent, and probably developed during the latter stages of the disease, at least no distinct evidences of its existence were observed until within a few days of the patient's death. With the exception of the thickening and softening of the mucous membrane of the small intestine, the commencement of which cannot be dated farther back than about two weeks before death, within which period diarrhœa first made its appearance, the remaining lesions were similar to those found in the preceding cases. The general flaccidity and softening of the organs, however, appear to have been marked more in the present instance. The perfect healthiness of the glands of Peyer is particularly worthy of note, on account of the altered condition of the mucous membrane of the small intestine generally, and the long continuance of the disease.

Having already stated that the lesion of the liver to which I have so often alluded, was found in every case of remitting fever which I have examined, I must now mention, in order that the reader may have an opportunity of forming his own judgment, that the organ was found nearly healthy in the case of an individual who at the time of his admission was supposed to be labouring under remitting fever; a supposition, however, which the subsequent course of the symptoms was calculated to render doubtful. The following is its history:—

Case V.—Wm. Jones, ætat. 23, born in Pennsylvania, seaman, entered the hospital Oct. 3d, 1840. He stated that he had recently arrived from Richmond, Virginia, and that whilst on board the vessel in the Schuylkill, on the 28th of September, six days before admission, he had been taken with pain in the head and back, chilliness, loss of appetite, and weakness. On the third day he had a chill followed by fever, and the next day but one by another chill; since then has had no chill, but constant fever, pain in his head, and thirst; was confined to his bed. On the 3d, the day of admission, he was very feeble; expression dull and dejected; answers slow; memory rather defective, complained of pain in the head and epigastrium; pulse feeble and frequent; skin warm; no vomiting; bowels confined. Has taken one or two doses of salts, during the first week of his illness. A dose of blue mass and rhubarb was administered, which operated slightly. In the evening he was very restless, would not keep the clothes on his bed, and was slightly delirious.

On the 4th, very dull; extremities cool; pulse feeble and frequent; tongue very dry, and covered with a thick brown crust, as since entrance. Mustard to legs, enema of spirits of turpentine, sulph. of quinine, gr. viii, by the mouth.

At night the extremities were rather warmer, but the dulness of intellect, restlessness, and delirium persisted; the sinapism had not reddened the skin after five or six hours. ℞. Calomel, Rhei āā, gr. x.

On the 5th, same symptoms, only more intense, when a blister was applied to the epigastrium, the sulphate of quinine repeated, and small doses of calomel and opium given every two hours. In the evening sinapisms were again applied to the legs.

6th.—So delirious last night that he was confined in bed; is now muttering; stupor marked; complexion very slightly sallow; conjunctiva a good deal injected, very slightly yellow; forehead moist; skin of arms cool, of trunk moderately warm, soft; pulse 114, small and feeble; tongue dry, chapped, brown; impulse of heart strong, as well as sounds; respiration natural anteriorly; belly retracted; spleen distinct below ribs, the dulness on percussion extending laterally upwards for full three inches; vomited a dose of effervescing mixture this morning; stools in bed, liquid, brown, and fœtid. ℞. Liq. ammoniæ acet. ℥ss. every two hours.

On the following morning, the intelligence was much clearer, the pulse fuller, but still about the same frequency; tongue moist, clean around the edges, crust separating; restlessness diminished; stools voided in bed as previously. Cal. et op. continued, with liq. acetat. ammon. and sulph. quinine. In the evening rennet whey.

8th.—Same condition; tongue cleaner; prostration marked. Omit cal. et op., and continue rennet whey.

From this time Jones became gradually weaker; his features sunken; no decided sallowness, but rather a leaden hue of complexion; the delirium continued, at times muttering, at others more active, on the last day declining into stupor, when his features were collapsed; hearing most remarkably dull, constant tremulousness of hands, which, together with the feet, were cold; no subsultus; pulse very frequent, small, and feeble; no vomiting, as throughout illness, except on the morning of the 6th; belly retracted, as before; no marked tenderness at epigastrium; urine passed in bed; the stools continued involuntary. Moderate doses of wine whey and other stimulants were given internally, poultices to legs, body rubbed with warm brandy, &c. In the course of the disease, also, a blister was applied to the back of the neck. He died on the evening of the 11th, at 11 o'clock.

Autopsy. Exterior.—Moderate rigidity and emaciation. Muscles dark.

Head. Veins of dura mater moderately injected; considerable sub-arachnoid effusion, especially at left; veins between convolutions much engorged at left, moderately so at right; on the upper surface of the left anterior lobe, the arachnoid was brilliantly red, and upon raising up the membranes, they were found to be adherent to the surface below, which in part was slightly torn; at right anteriorly the injection was slight, and the adherence less; on the middle and posterior lobes of the left side, the pia mater is more injected than at right, the injection extending between the convolutions; it is also adherent, though less so than anteriorly, but more so than on the corresponding lobes of the opposite side; the whole upper surface of the brain at left, was less consistent than at right; internal parts of brain presented nothing remarkable; red points numerous; two teaspoonfuls of clear water in lateral ventricles; about an ounce of effusion at the base of the brain; nothing else worthy of note.

Chest.—No adhesions or effusion in right pleura. Upper lobe of right lung supple, pale; its cells dilated; the middle lobe is solidified, reddish brown, granulated, sinks in water, is easily penetrated, and, when pressed, gives exit to a large quantity of dirty-coloured purulent matter; the lower lobe supple, crepitating, of natural texture, containing black blood. *Left lung* adherent throughout, supple, crepitating, without consolidation, reddish brown, posteriorly livid. No effusion into pericardium, or adhesions. Heart of natural size, containing firm fibrinous coagula; its walls firm; its lining membrane and valves natural.

Abdomen.—*Stomach* containing a dark greenish fluid; its capacity not remarkable. The whole mucous membrane is covered with a thick tenacious mucus; in the great cul-de-sac and larger curvature it is thrown into rugæ, which are ecchymosed in the former, of a yellowish green in the great curvature, the intervening membrane grayish, and covered with numerous red points; in the great cul-de-sac the mucous membrane is thickened, and slightly softened, the same throughout, the consistence increasing and becoming firmer than natural as you advance towards the pylorus; in the pyloric fourth of the stomach, the mucous membrane is of a darker colour, which penetrates to the peritoneal coat, and the mucous follicles are remarkably developed. Mucous follicles of *duodenum* greatly developed. The whole small intestine contains a pasty mucous, of an olive colour, with which also the mucous membrane is deeply dyed except in the lower part of the ileum, where the contents, as well as the membrane, are of a reddish brown; thickness of the mucous coat natural; no ulcerations in any part; the plaques of Peyer not remarkable, until within a few feet of the termination of the ileum, where they are of a deep reddish brown, almost livid, darker than the surrounding mucous membrane, a little elevated, especially the last one, near the ilio-cœcal valve, the elevation being due to swelling of their mucous membrane, the sub-mucous tissue presenting no marks of alteration, and the glands in other respects being natural; the mucous membrane generally of this lower part of the intestine was injected for about a foot and a half. *Large intestine* contains a large quantity of greenish coloured, soft matter; nothing else remarkable. *Liver*—upper surface reddish brown, mottled; same reddish brown internally; rather firmer than natural; two substances very distinct, the light preponderating, somewhat like commencing cirrhosis; size about natural. *Gall-bladder* 4½ inches long, by 2½ broad, filled with very thin bister coloured bile, with scarcely a trace of greenish or orange even when spread out in a thin layer; its mucous membrane natural, of a deep olive. *Spleen* double its natural size, somewhat softened, not pultaceous, of a reddish brown. *Kidneys* nothing remarkable; commencing granular appearance in the right one.

The statement of the patient in reference to the circumstances of his attack, the chill repeated after a period of 48 hours, &c., together with the absence of decided evidences of any other disease, led at first to the supposition that the above case was, as has already been mentioned, one of remittent fever. The subsequent course of the symptoms, however, did not at all accord with this view. Thus the delirium, which was present on the evening of the day of admission, persisted on the following evening, accompanied with a tendency to stupor, and, during the night of the 5th, was so violent that the patient was kept in bed by force. On the morning of the 6th, there was muttering and marked stupor, and except that the intelligence was clearer during the two following days, the delirium continued, at times muttering and at others more active, declining on the last day into stupor. The pulse was frequent and feeble, the stools involuntary; the skin without decided sallowness, much less yellowness, notwithstanding the continuance of the disease fourteen days. There was no vomiting, except on the 6th, and that after a dose of medicine; the tongue was dry, brown, and, during the last days of his life, there was constant tremulousness of the hands, which, as well as the feet, were cold. These symptoms, especially the permanency and character of the cerebral disturbance, the frequency and feebleness of the pulse, much more nearly resembled those of meningitis than of remittent. On examination after death, undoubted evidences of inflammation are found on the convex surface of the brain, especially of the left anterior lobe, the superficial layer of cerebral substance being softened on the same side. Along with the evidences of meningeal inflammation, there was not only absence of the peculiar alteration of the liver, but also of other changes belonging to remitting fever. Thus there were firm fibrinous coagula in the heart, a condition not once found in the cases of remittent; and, although the spleen was moderately enlarged and softened, its aspect was totally different from the dark-coloured pultaceous mass observed in the other cases mentioned. Besides, enlargement and softening of the spleen, as well as the inflammation of the mucous membrane of the stomach and other secondary lesions found in the present instance, are found more or less frequently in meningitis as well as in other acute inflammatory affections. If then we consider the accordance of the symptoms with those of meningitis, the evidences of this inflammation after death, with the absence not merely of the lesion of the liver, but of other alterations usually observed in remittent fever, I think we can have little difficulty in admitting that the case must be regarded as one of meningitis. If any one should feel disposed to look upon the latter as a mere complication, let him recollect that the dulness, delirium, feeble and frequent pulse, &c., were present as early as the sixth day, the period of admission; that the subsequent course of the disease was in accordance with that of simple meningitis, there being an absence of symptoms characteristic of any other affection; and that the previous history of the case (the perfect accuracy of which we cannot rely upon, as the patient was dull and his memory defective) is not at variance with the interpretation we have adopted, as the repetition of the chill at a regular interval is occasionally found at the commencement of various acute diseases. That it was not a case of typhoid fever is sufficiently evident from the absence of lesion in the glands of Peyer, other at least than a deep red colour with a little elevation of a few of them, the mucous coat only being involved in common with that around them.

The above case then does not invalidate the truth of the statement, that the alteration of the liver was found in every case. It affords an example of the danger, during a time of general prevalence of any particular disease, of too hastily classing with the prevailing affection every case, especially if, as in the present instance, rather obscure, which may offer some analogous features. And, further, had not the condition of all the principal organs been observed and recorded, so as to afford the means of a careful comparison with the symptoms, the case might readily have been regarded as one of anomalous remittent, in which the characteristic alteration of the liver was absent.

Whatever may be the results of future observation in reference to the constant occurrence of this lesion, and even if the conclusion to which I have arrived, that it constitutes the *essential* anatomical characteristic of remittent fever, be found erroneous, owing to its absence in a certain portion of cases, it is still worthy of attention. It certainly constitutes a most peculiar and important anatomical feature of the disease. Its connection with certain symptoms during the early and middle period of the disease, its tendency to pass into cirrhosis in protracted cases, and thus lay the foundation of certain chronic organic alterations, abdominal effusion, &c., and the assistance it must afford in determining in fatal cases the diagnosis between remittent and other fevers, are sufficient to convince us of its claims upon our attention. The striking difference between it and the alteration of the liver which belongs to yellow fever is particularly interesting, especially as it was found quite as strongly marked in the case which most nearly approached to the latter disease, as in any of the others. Whilst in remittent the liver is of a dull bronze or between a gray and olive, in yellow fever it is pale and of various shades of yellow, as straw yellow, gum yellow, &c. In typhoid fever the liver appears to present no other change of colour than what arises from an increase or diminution of the red tint, being sometimes of a darker red, at others paler than natural.

Before concluding this part of the subject, I will mention that in the only case of marsh fever examined during the past season at the Blockley Hospital, under the charge of my friend Dr. Gerhard, the liver, which was submitted to my inspection, presented the same peculiar characters already described as belonging to remittent fever.

Gall-bladder.—Contrary to what occurs in yellow fever, the bile was most commonly abundant. In one instance, however, there was only an ounce of this fluid in the gall-bladder, which was contracted also in another. Not only was the bile abundant, but commonly fluid and quite thin. There was nothing uniform in the colour. With the exception of the case already detailed (case IV), in which the gall-bladder was the seat of recent inflammation, the organ appêars to have presented no lesion of importance. In one case, however, its condition was not noticed.

Spleen.—This organ was enlarged and softened in every instance, and generally to a great degree. Thus in three cases, where the measurements are given, it was about seven inches long by from four to five broad, and in three others the lowest degree of enlargement is stated at from four to five times the natural size. In the seventh the degree of enlargement is not noted. The softening also was great, amounting generally to pulpiness, and as the colour was dark, the aspect of the organ was frequently very much that of a sac containing black clotted venous blood. Mere enlargement and softening of the spleen are not at all peculiar to remittent fever, inasmuch as they are found in various acute diseases, especially in typhoid fever, where the spleen is almost always increased in size, and very generally softened. There appears to be this peculiarity, however, in the disease before us, viz., that the enlargement and softening were not only constant, but uniformly considerable in amount. When we consider this circumstance in connection with the fact that the lesion of the spleen is often accompanied in remittent fever with pain and tenderness in the left hypochondrium, we are obliged to admit that it is not altogether similar to that found in other diseases, especially typhoid fever. At the same time there is nothing in the appearance of the organ to distinguish it in individual cases from an analogous alteration occurring in other diseases. Upon comparing the condition of the spleen in remittent with that observed in yellow fever, we again find a striking difference between these two diseases, for in the latter the organ is remarkable for its almost uniform freedom from any considerable morbid alteration.

Stomach.—Variable in size, it contained in three of the five cases in which its contents are noted, a dark or dirty brown fluid, and in the two others, a bright yellow, or yellowish green matter. In five of the six cases in which the condition of the mucous coat is particularly noted, marks of inflammation were present, the membrane being mamelonated in three; thickened in two; thinned throughout in one, in the great cul-de-sac in another; softened throughout in one, especially along the great curvature in another, the softening limited to the great cul-de-sac in a third; firmer than natural in two. The colour in one case was between bister and olive, with a mixture of red in the great cul-de-sac; in another of a pale slate colour, except in great cul-de-sac, where it was dyed red in large patches, and along course of vessels. In one it was covered with a thick coat of tenacious mucus, in another with patches of lymph, giving it the appearance of being daubed with white paint. These various alterations were so combined as to leave little doubt of the presence of inflammation in the five cases mentioned. In the sixth the mucous membrane was of natural colour, except along its folds, which were of a deep orange yellow; its consistence and thickness diminished in the great cul-de-sac, elsewhere natural, except that it was rather friable. So that if in this case the mucous membrane was not perfectly healthy, there are at least no evidences of its having been the seat of inflammation. It was in this case that the disease approached so nearly to intermittent.

This frequency of inflammation of the stomach is very analogous to what is observed in yellow fever, but much greater than in typhoid fever, whilst at the same time the gastric symptoms are much more prominent in remittent than in the latter disease. The following is an example of the lesion under consideration.

Case VI.—Horace Foster, ætat. 22, born in New Jersey, seaman, of moderately temperate habits, entered Aug. 14th. Attacked Aug. 10th, in Philadelphia, having arrived a short time before from Wilmington, North Carolina, with headache, and vomiting of bitter matter, accompanied with severe pain and distress at the epigastrium.

On admission, Aug. 14, cephalalgia, uneasiness at epigastrium, and nausea; not much activity of pulse, or heat of skin. An abundant eruption of urticaria on body and limbs; a similar eruption had shown itself and disappeared, during the four days previous to admission. An emetic of ipecac. gr. xx, was administered, and on the following morning the skin was soft and natural, the pulse good, and the gastric symptoms much relieved; eruption entirely gone, intellect perfect. In the evening he complained of nausea and oppression at the stomach, when a dose of calomel and ipecacuanha was administered, followed by an opiate, and three scarified cups applied to the epigastrium. On the 16th, the epigastric symptoms had not notably diminished, and the tenderness on pressure was considerable; bowels freely opened. Eight ounces of blood were taken by leeches from the epigastrium, and immediately afterwards wishing to evacuate his bowels, and being placed upon the chair at his bedside, he fainted, and was slightly convulsed. In about three minutes he was laid in bed, when his sensibility gradually returned, but the extremities were very cold, and so continued on the 17th, when they were rubbed with oil of turpentine, and 20 grs. of quinine with 30 drops of laudanum, given by enema. A blister also was applied to the epigastrium, and pills of blue mass and rhubarb ordered every two hours. About this time the skin began to become more yellow, and the intelligence to get dull. On the 18th, cold was applied to the head, and grs. xii, of sulph. of quinine given by the mouth. On the 19th, the extremities, which had not yet regained their natural heat, though much warmer than on the 17th, were excited by sinapisms, and in the evening quinine was again thrown into the rectum. A blister was applied to the back of the neck. At this time insensibility was almost complete, and, the symptoms gradually increasing, he died early on the 20th.

The following account of the autopsy, made twelve hours after death, was drawn up by Dr. Süllé:—Skin everywhere yellow, ecchymosed stripes in depending parts; rigidity marked; abdomen flat and hard; muscles of trunk dark red; strongly developed and firm; fat abundant and firm. *Brain* of an ashen hue; a little injection, and slight opacity in several points of arachnoid along longitudinal sinus; no pus, no sub-arachnoid effusion; no adhesions of pia mater to brain; cortical substance dark and distinct; medullary milk white, studded with a few bloody points on section, soft, pasty, and very dry; not a drop of fluid in ventricles; all central parts of the brain very distinct, but soft; not pulpy, but pasty; half an ounce of bloody serum at base.

Chest.—Lungs free; left, ash coloured, crepitant, but a little dark posteriorly; summit of middle lobe of right, firm, friable, dark red, section granular, containing but little air. *Heart* firm and pale; from the veins flowed a thin red liquid, mixed with soft, clear yellow clots; same kind of blood and clots in ventricles; valves natural; aorta lemon yellow.

Abdomen.—Intestines moderately distended, of a dingy ash colour and pasty feel. *Spleen* about 7 in. by 5, and 2½ thick, soft, dark, friable. *Liver* heavy, rather large, smooth, of a dull bronze colour; section very smooth, component parts indistinct; consistence nearly natural, a little soft; its blood very thin and serous. *Gall bladder* distended with a thin granular fluid, which, when in bubbles, presented a deep orange hue; mucous coat of a deep bronze. *Stomach* long; narrow, yellow, containing nearly its full of dirty brown liquid; internal surface covered with a thick coat of yellowish brown tenacious mucus; mucous membrane corrugated in the middle, smooth at either end, everywhere thickened, consistence natural in the great cul-de-sac, much increased in the middle and lower end; no injection, or ulceration. *Duodenum* studded with minute elevated round bodies, half a line in diameter, with a dark central point. (Brunner's glands.) *Intestine* contained an orange coloured pultaceous matter; valvulæ conniventes remarkably distinct; mucous membrane natural, without injection or softening, perhaps slightly thickened. Peyer's glands very distinct in lower two-thirds of intestine, honey-combed, *i. e.* dotted with depressed dark points, their outline well marked, their sub-mucous cellular tissue not hypertrophied, and neither they nor it injected; no ulcerations; mesenteric glands natural. *Large intestine* distended moderately, contents pale and pasty, not yellow; nothing else remarkable. *Bladder* distended by half a pint of orange coloured clear urine.

Attacked four day previous to admission with headache, vomiting, pain and distress at the epigastrium; this patient entered the hospital on the fifth day of the disease, or at the commencement of the third tertian period. Besides the headache, gastric symptoms, slight activity of the pulse and heat of skin, there was a general eruption of urticaria, which had been present for a time previous to admission, probably during the preceding exacerbation. An emetic of ipecacuanha being administered, on the following morning the symptoms were so much abated, as to give the appearance of convalescence, an effect doubtless owing much less to the action of the emetic than to the natural termination of the exacerbation, for in the evening the gastric symptoms returned, and, notwithstanding the repetition of the emetic combined with calomel, assisted by topical depletion to the epigastrium and followed by an opiate, they had not on the following morning notably abated, whilst the tenderness was considerable. Subsequently, the remissions were less marked, and indeed, from the imperfection of the notes, (they not having been taken at the bedside,) it is impossible to follow them. About the eighth day the skin became more yellow, the intelligence dull, the extremities were cold as on the previous day, and never afterwards regained entirely their natural warmth. He died on the eleventh day, and on examination we find the liver heavy, of a dull bronze colour, its section very smooth, the component parts indistinct; the spleen enlarged, dark and soft; the stomach yellow, contracted, its mucous coat covered with a thick layer of yellowish brown tenacious mucus, every where thickened, and firmer than natural in the middle and lower portions; the other organs presenting no important alteration. Here again we have the same general condition as in the other cases, with the absence of those lesions which are essentially characteristic either of yellow or typhoid fever.

The more or less frequent presence of inflammation of the stomach in various fevers and other acute diseases, is a fact now so well understood, that it is hardly necessary to attempt to refute the opinion which would refer remittent fever to gastritis as its cause. Indeed, not to speak of its absence in one of our cases, (which might be objected to, as its type was perhaps intermittent,) every one will admit that it is impossible to explain all the symptoms by means of the inflammation of the stomach alone. It then follows, in order that we may be able to account for some of the most characteristic symptoms, that the inflammation of the stomach *necessarily* gives rise to some other lesions on which these symptoms directly depend. Now the only other important and uniform lesions were a peculiar alteration of the liver and enlargement with softening of the spleen, and, if these were a mere consequence of the gastritis, why are they not produced under other circumstances where this inflammation exists? Why, in yellow fever, where gastritis is so frequent, is the alteration of the liver so different, and the spleen so exempt from disease? Besides, in the case above referred to, where the stomach does not appear to have been the seat of inflammation, the liver and spleen presented the same lesions as in the other cases.

Duodenum.—The mucous membrane, although not accurately described in every case, seems to have presented nothing worthy of especial mention, except that it was thickened and softened in one instance in common with that of the small intestine generally. Its mucous follicles, or glands of Brunner, however, were remarkably distinct in all the six cases where the duodenum was particularly mentioned. To say that the development of these bodies was anormal in every instance, would perhaps be going too far, but there can be little doubt that it was so in most. In two instances it was accompanied by a similar enlargement of these bodies in other parts of the small intestine, an example of which will be found in the following case, which occurred in November last, after the expiration of my annual term of duty, and for an account of which I am indebted to Dr. Stillé.

Case VII.—William Branch, a seaman, ætat. 25, was brought to the hospital, November 12th, 1840, about 11 A. M. Between 12 and 1 P. M., I was called to see him in the absence of Dr. Stocker. He was pulseless, his extremities cold, his face pale and somewhat blueish, his eye rolling vacantly, pupil dilated; his whole body agitated, turning from side to side; he appeared to listen to questions, but made no articulate reply. Abdomen not distended; the skin over it vesicated. I was told that the persons who had brought him to the hospital, had stated that he had the "Southern fever," but I could learn nothing more concerning him. Stimulating poultices were ordered to extremities, an emulsion of turpentine was given per anum, his body was rubbed with spirits, and some brandy forced down his throat. He struggled violently against receiving the enema, but did not, I believe, speak intelligibly. No change for the better took place, and he died about 4 P. M. of the same day.

Autopsy twenty-four hours after death, in clear, cold weather. Stature about 5 feet 7 inches; rigidity marked; surface pale; a few ecchymosed spots in depending parts; no emaciation; cuticle of abdomen raised, as if by a blister; face not distorted; muscles firm, of full development, and dark red colour; sub-cutaneous fat a quarter of an inch thick.

Chest.—*Lungs* crepitant, dark on their posterior faces, without hepatization; pleuræ smooth and not injected. *Heart* about as large as fist of subject; its muscle firm; the cavities containing one or two small, fibrinous semi-transparent coagula, of a greenish hue; valves healthy. Blood in veins liquid and dark.

Abdomen.—No effusion. Omentum olive coloured; many folds of the small intestine of the same colour. Mesenteric glands small, not injected. Peyer's glands not developed; solitary follicles much so, in the whole length of the small intestine, but notably in the duodenum, in the first two inches of which they were set so closely together as to give to the mucous surface the appearance of a grater. *Stomach* inflated, half filled with a yellowish green pasty fluid; mucous membrane soft and thin in the great cul-de-sac, elsewhere firm, rough, mamelonated, and covered with patches of lymph, looking as if they had been made by applying white paint here and there with a brush. *Spleen* 7 inches long, 4 broad, and 3 in thickness, of a rounded form and very soft. The *liver* filled the right hypochondrium, the epigastrium, and a portion of the left hypochondrium, where its peritoneal coat was adherent to that of the spleen. Its length was 16 inches, its breadth 8, and its greatest thickness 3 inches; it was very heavy; over its surface ramified a number of fine silvery vessels, supposed lymphatics; its colour was between a brown and an olive, the latter being predominant and chiefly given by the parenchyma, the former by an infinite number of small round spots about half a line in diameter. A section of its substance was smooth and glistening, and offered the same colour and distribution of parts as the surface. Its texture was moderately firm, the finger penetrating it readily. Its large veins contained liquid and dark blood. *Gall-bladder* not noted.

Notwithstanding that the patient was seen only a few hours before death, and that we are perfectly ignorant of his previous history, beyond the mere fact that he was a seaman, and supposed by those who brought him to the hospital to be labouring under "Southern fever," we can have no doubt that their view of the case was correct; for not only did the concluding symptoms correspond to those of pernicious remittent, but, after death, the same lesions were found as in the other cases. The liver was much enlarged; its colour between brown and olive, the latter predominating; its section smooth and glistening; the spleen very much enlarged and softened, and the mucous membrane of the stomach inflamed, being rough, mamelonated, and covered with patches of lymph, except in the great cul-de-sac, where it was thinned and softened. The development of the isolated follicles, instead of being limited to the duodenum, where, however, it was most marked, was not only very decided, but existed throughout the whole length of the small intestine. The glands of Peyer were healthy.

No especial importance can of course be attached to the simple enlargement of the isolated follicles, which is common to a number of diseases, without our being able to associate it with any particular symptoms. It is, however, well worthy of attention, that, in the cases before us, there seems to have been a remarkable tendency to the enlargement of these bodies in the duodenum.

Small intestine.—No lesion of importance was found in this organ in any case, if we except the one where its mucous membrane was throughout softened and thickened, in which case, it will be recollected, the disease was very protracted, and accompanied towards the close by diarrhœa. The glands of Peyer were uniformly healthy. In two cases the isolated follicles were unusually developed; in one of them (the case last detailed) throughout the whole extent of the small intestine; in the other, in the last two feet of the ileum. The contents, where noted, were of an orange colour.

Large intestine.—In one case its condition is not mentioned. In five others, it was healthy or offered nothing worthy of note. In the seventh, where the disease was complicated with severe dysentery, the mucous membrane was softened and studded with numerous ulcerations, some of them extending as deep as the muscular coat, which, together with the sub-mucous tissue, was thickened.

Case VIII.—Susan Queen, ætat. 28, unmarried, a domestic, born in Ireland, entered the hospital Oct. 6th, 1840. She had been about a year and a half in America, and during the greater part of that time had resided in New York, but subsequently went to Savannah in Georgia, where she was attacked with her present illness about a month or six weeks ago. No satisfactory account was obtained of her symptoms previous to admission. The following is the general character of her symptoms during the week which elapsed between her admission and the fatal termination.

The skin, sallow at the time of her entrance, became more and more yellow as the disease advanced. Emaciation extreme; features very much contracted; mind feeble, but no delirium, until within a few days of her death: constant moaning; prostration extreme; lay mostly on the right side, with the legs drawn up; pulse small and feeble; tongue covered with dark brown fur; no difficulty of deglutition; abdomen hard and tender on pressure; no vomiting; no appetite; eight to twelve stools in 24 hours, at times bloody and watery, at others yellowish but fluid, of a very penetrating and sickening odour. On the 6th, the day of her admission, a grain of acetate of lead and one-fourth gr. of opium were directed to be given three times a day. On the following morning, however, as the pulse was more active and frequent, the skin hot, and the tenderness of the abdomen on pressure was considerable, the pills were omitted, and a blister six inches square was directed to the abdomen. In the course of the day an enema of cold flaxseed tea was also prescribed, and in the evening one of sixty drops of laudanum. Subsequently she was put upon the use of calomel and opium in small doses, and on the evening of the 9th it was thought necessary to stimulate her with milk punch. She died on the 13th, at 5 in the morning.

Autopsy, 31 hours after death.

Brain.—Dura mater pale. Arachnoid smooth, transparent, some infiltration beneath. Veins of pia mater containing but a moderate quantity of blood; red injection natural, or rather less than natural. Membranes easily raised from the convolutions. The two substances of the brain very distinct; the cortical of a deep colour; both of natural consistence, quite firm, the medullary having a pasty feel; the red clots not remarkable. Scarcely any serum in the ventricles. Cerebellum natural.

Chest.—Old adhesions at the summit of the left lung; none at right. Both lungs were supple and crepitating throughout, and presented nothing worthy of note. The *pericardium* contained a small quantity of serum. The *heart* was of moderate size and flabby. Its right ventricle contained a considerable quantity of black coagula, mixed with red serum; the lining membrane, and still more so that of the auricle and the auriculo-ventricular valves, of a deep violet colour, smooth and without opacity. The same colour at left, but much less marked, as also in the pulmonary artery, and the aorta, at their origin. All the valves supple.

Abdomen.—The *stomach* contained two ounces of bright yellow semifluid matter. Venous arborescence in the great cul-de-sac; no other injection. The mucous membrane was mamelonated along the great curvature, everywhere thinned and softened, except near the pylorus, where it was of good consistence and natural thickness. No ulceration. The mucous membrane of the *duodenum* was a little softened, but otherwise natural; the glands of Brunner much developed, especially near the orifice of the stomach. The *small intestine* contained a considerable quantity of orange coloured matter throughout its whole extent. The mucous membrane was more or less of the same colour until after it had been frequently washed. when it offered its usual pale appearance; its thickness and consistence natural, except near the ileo-cœcal valve, where it was a little softened, but pale; Peyer's glands perfectly natural. The *large intestine* contained a quantity of chocolate coloured fæces. Its walls were very thick, chiefly owing to the thickening of the muscular and sub-mucous coats. Mucous membrane studded with an immense number of ulcerations, varying in size from that of a small pea to that of a bean, rounded or oval, in some limited to the mucous coat, in others extending to the muscular. These ulcerations were more numerous and larger, as we approached the termination of the rectum, but extended throughout the whole tract of the intestine. The intervening mucous membrane was opaque, not varying decidedly from its natural colour, except by a slight admixture of slate colour, with here and there a spot of light brown; its consistence was diminished, especially in the rectum, where it also presented a granulated appearance, and was perhaps a little thinned; elsewhere its thickness was about natural. The *liver* was not remarkable in size; very flabby; its surface of a dull lead colour, except about the left lobe, where a portion of it was of the usual reddish brown hue; its colour internally bronzed with a reddish shade, the surface of a section shining, rather mottled by the unequal development of the two substances, which are not distinguishable, however, by any very distinct shades of colouring; its consistence softer than natural. The gall bladder small, containing about an ounce of fluid and moderately viscid bile, of a colour between olive and orange. The spleen enlarged, about six by four inches, very soft, pulpy, of a brownish black colour. The mesenteric glands healthy. The kidneys flabby, their cortical substance pale, but otherwise natural.

As before remarked, we were unable to obtain any satisfactory account of the disease previous to admission. The patient was evidently labouring under dysentery, but this was not sufficient to explain all her symptoms. The circumstances under which she had been attacked, the yellowness of the skin, and perhaps something in the general aspect of the patient, were calculated to lead to the suspicion that, combined with dysentery, she was labouring under a protracted form of remittent. No distinct exacerbations of fever, however, are noted, if we except that on the morning of the sixth, when the pulse was more active than previously, and the skin hot, a circumstance, to say the least, more in accordance with the supposition of remittent, than of simple dysentery, at so late a period of the disease. Whatever doubt might have existed during life, was, however, removed by the examination after death; for, besides the thickening, ulceration, &c., of the large intestine, the mucous coat of the stomach was inflamed; the liver and spleen presented the same alterations as in the other cases of remittent, whilst the evidences of any other disease were absent. The inflammation of the large intestine, and the consequent debilitating discharges, were undoubtedly among the principal causes of death.

Mesenteric glands.—We have neglected to note their condition in three of the seven cases. In the remaining four they were healthy or without evident enlargement.

The *kidneys* were sometimes flabby, but, so far as examined, presented no lesion of importance.

In one case where it had been necessary to draw off the urine frequently by a catheter, and, where the bladder was considerably distended, its muscular coat was greatly developed.

As regards the external appearance of the bodies there is little to be said. Yellowness of the skin is mentioned in only one case, though undoubtedly it existed also in the three others where it was present during life. In one case the skin is described as pale. Emaciation was not remarkable in any except the two cases where the disease was protracted. Indeed, in one of the others the muscles are noted as being dark red, firm and fully developed, the fat abundant and firm; in another, the muscles the same, and the subcutaneous fat a quarter of an inch thick. Rigidity was marked in every case where this circumstance is alluded to.

Let us now observe, in conclusion, that, of the various lesions described in the foregoing pages, two only were constant or observed in every case, viz. that of the spleen and the peculiar alteration of the liver. We might perhaps include among the constant lesions, the development of the glands of Brunner in the duodenum, but it may admit of doubt whether these glands were really morbidly enlarged in every case, although, at the same time, their frequent enlargement and uniform distinctness constitute a striking peculiarity of the disease. Of those which were not constant, the inflammation of the stomach is unquestionably most worthy of attention, both on account of its great frequency and the importance of the organ itself. The lesion of the spleen, though constant, was similar in appearance to that found in other diseases. It was remarkable, however, for the uniformly great degree to which it was carried, and for being frequently accompanied during life with pain on pressure in the left hypochondrium, a circumstance not usually accompanying enlargement and softening of the organ in other acute affections. The liver, on the other hand, was the seat of a morbid change, not only present in every case, but of a character not met with in other diseases, and as it was the only lesion which offered these two conditions, the conclusion is obvious that it constituted the essential anatomical characteristic of the disease, as it presented itself to our observation. As the number of cases were small, such a conclusion when viewed as a general proposition, applicable to remittent fever universally, can only be regarded as the indication of a probable truth, the full confirmation of which requires the analysis of a more extended series of observations, conducted after the same manner. I have already given my reasons for supposing that the lesion in question will probably be found to be uniformly characteristic of the disease, and also for believing that even if such should not be found to be the case, it still had strong claims upon our attention, and shall not repeat them here. It is a circumstance particularly worthy of note that the only two fevers in which yellowness of the skin is found as a principal symptom, should also be the only ones characterised by any remarkable alteration of the liver, and this consideration is certainly calculated to give to the latter additional interest and importance. I ought perhaps here to mention that I was made acquainted with the conclusions of M. Louis in reference to the anatomical characteristic of the yellow fever of Gibraltar, some years before the publication of his work on that subject, as he kindly favoured me with a perusal of the manuscript, which he placed in my hands for that purpose shortly before my leaving Paris in the year 1834. To this circumstance I am no doubt much indebted for having my attention especially directed to the condition of the liver, particularly as the very first fatal case which occurred at the Pennsylvania Hospital, after my entrance upon the duties of my station, bore a strong resemblance in many of its symptoms to yellow fever. Admitting that the lesion of the liver, which I have described, really constitutes the essential anatomical characteristic of remittent fever, are we to look to this organ as the primary seat of the disease? To this, I think, we must answer in the negative, at least so far as our information at present extends, because, in the first place, we have no evidence that the lesion is present at the very commencement of the disease, although it is highly probable that it exists at a very early stage, and, in the second, it is impossible, even if it were so, to explain by its means all the early symptoms, or, in other words, to trace them to it as to their source. In short, it seems to me, that here, as well as in typhoid and yellow fever, the characteristic anatomical lesions are to be regarded, like the pustules of small pox, as consequences and not as causes of the affections which they severally characterize, and that we must look for the latter in some morbid condition other than what is observed in the solid organs. It is to be hoped that the investigations now going on in reference to the alterations of the blood may throw some light upon this obscure subject.

Of the causes of death but little need be said. In some cases the condition of the organs afforded a sufficient explanation of it, especially in those two, where, in addition to the lesions generally met with, there was either extensive ulceration of the large intestine, or thinning and softening of the mucous membrane of the small intestine with partial peritonitis. In others again, the lesions of the solid viscera do not appear to be sufficient, but, as the blood was altered in every case in which its condition was noted, we may reasonably conclude that the changes in this fluid played an important part in bringing about the fatal termination.

The symptoms, &c., will form the subject of a future communication.

Art. II. *Statistics of Fractures and Dislocations Treated in the Pennsylvania Hospital, during the ten years, from* 1830 *to* 1839 *inclusive.*

By George W. Norris, M. D., one of the Surgeons to the Institution.

In the whole range of surgical subjects, there are none of greater practical importance than those of fractures and luxations; none that require more constant care and attention for their proper treatment, and none consequently that should more frequently be urged upon the notice of the practitioner and student. During the ten years which have just elapsed, a large number of these accidents have been treated at the Pennsylvania Hospital, and without having any novelties regarding their treatment to make known, we have thought that it might not be uninteresting to the readers of the reports from this hospital to have presented to them the results obtained there during a term of years, in these important classes of injuries. As has ever been the case, surgeons are still divided in opinion as to the best method of treating fractures of the extremities. Volume after volume has been written to show the propriety of one or another mode of treatment, but in few instances only has an appeal to a large number of facts been made to justify the recommendations that have been given of them. To public institutions it is that we must principally look for statistical information in regard to these injuries, and, although our records on this subject are so imperfect as to permit us to give only general results, still we look upon them as of some interest, and have prefaced them with a concise account of the plan of treatment which has been generally adopted in these accidents, during the time mentioned.

Femur.—In the treatment of most fractures of the thigh, the straight position is preferred, and the apparatus of Desault modified, is that mostly employed. The improvement consists in the greater length of the outer splint, and the attachment to its lower end of a small block, over a notch in which the extending band passes, in order that the extension be made in a line with the axis of the limb. If the limb can be at once brought down to its natural length, it in all cases should be done on the first application of the apparatus; but when there is so much muscular contraction as to render this very painful, the limb need not be drawn to its full length at first. In these cases it should be extended as much as possible, and, at the second visit of the surgeon, should be seized at the ankle, and slowly pulled downwards, while an assistant tightens and makes fast the extending band. This course is to be repeated until the fragments are perfectly reduced, which may in most cases be readily done at the end of twelve or eighteen hours. No great advantage is believed to be gained by the employment of short splints, or bandages of any sort, applied immediately to the thigh, and their use is dispensed with, as they prevent the surgeon from accurately examining the state of the fracture, and require that the limb should be disturbed in order to re-apply them. A long narrow bag, stuffed pretty firmly with cotton, and covered with buckskin, is used for the counter-extending band; and a double buckskin gaiter, with a thin layer of carded cotton laid over it, or a buckskin band lined with linen, is made use of for the extension. Extension violent enough to cause pain should never be made use of; it ought always to be moderate, steady, and permanent. If constant pain is complained of at any point on which the dressings press, it should be immediately examined and re-adjusted. The restlessness of patients causes any apparatus to be easily displaced, and it is therefore necessary to smooth, tighten, and carefully re-examine it daily. Excoriation of the heel is most frequently produced by want of care in not having the extending band smoothly applied to the part, or by tightening it in too great a degree without having previously drawn down the limb with the hand. Sometimes, however, excoriation is caused by the weight of the foot alone; and in these cases the application of a piece of kid, spread with soap cerate, will mostly prevent it.

In fractures of the femur within the capsular ligament, the application of any splints in the treatment is discarded—the limbs being merely supported by pillows in the extended position. No case has been observed in the period comprised in this report, in which the toes were thrown inwards. Several instances of fractures about the hip joint, in persons of middle age, have come under notice, in which, even with the most accurate examination and measurement, it was impossible to detect any crepitus or shortening of the limb till after the lapse of one or more days.

Leg.—I the treatment of fractures of the leg, as in those of the thigh, splints or bandages are rarely applied to the limb. The leg is placed in a fracture-box upon a well-stuffed pillow, previously covered by a thin oil cloth, in such a manner as to bring the sole of the foot in contact with the foot-board. The fractured bones are then accurately adjusted, and the sides of the box are tied together moderately tight. The foot is securely fastened to the foot-board by means of a strip of bandage, in order to prevent its falling to either side, and the pressure of the pillow is, in the vast majority of cases, quite sufficient to retain the fragments in their natural position. The foot-board of the box is set into its bottom nearly straight, and is made to project beyond the foot, in order to prevent the toes from falling downwards, and thus cause a projection forwards of the upper end of the lower fragment.

Severe inflammation so frequently follows these fractures, in consequence of most of them being accompanied with much contusion, that measures are invariably taken *ab initio* to lessen its severity. These consist in the application of cooling lotions to the limb and attention to position, elevating the fracture-box or foot of the bedstead. It is to prevent the pillow from becoming wet and unpleasant when the evaporating lotions are applied, that the oil cloth is placed above it. In order to obviate deformity in these fractures when they occur at the lower part of the leg, it is highly important to keep the foot well forwards, and this is best done by placing under the heel some layers of carded cotton.

At the end of five or six weeks, the union is generally sufficiently firm to allow of the removal of the limb from the box, and a bandage and pasteboard splints, made to fit accurately the leg by previously soaking them in warm water, are applied to its sides. On these becoming hard, the patient is permitted to move about.

In very oblique fractures of the leg, where the pressure made by the pillow is not sufficient to prevent the recurrence of deformity after its reduction, permanent extension is kept up by means of Desault's splints, as in fractures of the thigh.

In fractures of the lower end of the fibula, where the foot is much drawn outwards, the apparatus of Dupuytren, consisting of a conical pad to make pressure over the internal malleolus, and a single splint applied to the inside of the limb, from the upper extremity of the leg to some distance beyond the foot, is employed; but where, as is most generally the case, the tendency to a recurrence of the deformity is not in a great degree, the apparatus commonly made use of for other fractures of the leg, consisting of the fracture-box and pillow, so placed as to exert rather more pressure than usual upon the outer ankle, is resorted to. These fractures are sometimes accompanied by compound luxation of the lower end of the tibia. The following instance in which this occurred, where the lower extremity of the tibia was successfully removed by Dr. Harris, was witnessed by me.

Barney Short, ætat. 32, was admitted on the 21st of June, 1830, for a compound fracture at the ankle. Upon examination, the foot was found to be thrown outwards, and the end of the tibia to protrude through the integuments, which embraced it tightly, at the same time that there was a fracture of the fibula three inches above the joint.

Pretty strong efforts were made to reduce the displaced bone, which caused the man so much pain, that Dr. H. desisted from his attempts, and determined to saw off the projecting end of the tibia.

About an inch and a half was accordingly removed, after which the bones were easily reduced and the limb placed in a fracture-box and cold applications made to it. Although severe inflammation followed the operation, yet the man did well, and was discharged on the 13th of October following, walking with the aid of a crutch but with the wound perfectly healed.

Two years after, Short visited the hospital; his leg was perfectly sound, though of course shortened. With a high-heeled shoe he walked very well and a great deal—his occupation being at the time that of a pedler.

Compound fractures of the leg are more frequent with us than compound fractures of any other part. When not so severe as to call for immediate amputation, the wound is carefully cleansed, and its sides accurately brought together with strips of adhesive plaster, and covered with lint, after which the limb is placed in a box, as in simple fractures, without bandages or short splints, and cooling applications made to it. If the wound unites by the first intention, which, however, is exceedingly rare, the treatment is continued; and in cases where this does not happen, if the suppuration which follows is moderate in quantity, the same treatment is pursued with the addition of a poultice laid over the part.

In these accidents, where the discharge of pus becomes profuse, or where hæmorrhage from the veins or small arteries, either primary or secondary, is troublesome, or is to be looked for, an excellent mode of treatment was introduced into the house many years since by Dr. J. R. Barton. It consists in fixing the limb in a good position in a fracture-box on a bed of dry bran, and surrounding and enveloping it with the same material. This application is soft and pleasant to the patient, makes moderate and very equable pressure, which is increased in proportion to the increase of the hæmorrhage by the bran becoming moistened and expanded, and is unirritating to the wound, at the same time that it may be removed with the aid of a spatula or syringe, and re-applied without causing pain or disturbing in any degree the limb. No mode of dressing that I have ever made use of can be compared to that with bran, in injuries of this kind attended with profuse suppuration, during our extreme hot weather. At this season, the fetor arising from the discharge is often so powerful as to taint a whole ward, and in such cases animalculæ are generated in the course of a few hours, if the wound be in the slightest degree exposed. Clean bran, by covering completely and closely every part of the injured surface, hinders the generation of these animals, and at the same time prevents, in a great measure, the odour that would otherwise arise, by rapidly and effectually absorbing the discharge.

Patella.—In fractures of this bone, the treatment consists in the application of a roller from the toes upwards, passed around the knee in such a way as to bring the fragments into apposition, and applied with a very moderate degree of tightness. The limb is then extended upon a well padded splint, extending from a little above the heel to the upper part of the thigh, and the whole is afterwards placed upon an inclined plane composed usually of pillows.

Clavicle.—For a number of years past, the use of Desault's apparatus for fracture of the clavicle has been entirely abandoned. As generally put on, the apparatus does not fulfil the indications intended, and when applied tightly and properly, so as to keep the fragments in perfect apposition, it in most cases produces great difficulty of respiration, or severe pain in the arm or chest. Besides this, it soon becomes relaxed, is easily deranged, and covers entirely the seat of injury, thereby making it impossible to ascertain whether or not the reduction remains complete without the removal of a part of it. The apparatus used at the hospital consists in a pad for the axilla, a ring formed of some soft substance, as a roll of muslin or of buckskin, for the shoulder of the sound side, and a sling for the elbow made of linen, extending half way up the arm, and two-thirds of the way down the fore-arm. To the elbow piece is attached three strong tapes—one to its upper and posterior part, and one to each anterior extremity. The following is the mode of applying the apparatus; a proper pad being selected and fixed in the axilla, by means of tapes fastened to its upper ends, and passing over to the sound shoulder, the ring or collar is carried up and held on the shoulder of the sound side; the sling is then fitted to the elbow, and after the fracture is reduced by drawing the arm downwards, and pushing the elbow upwards across the chest, the tape on its posterior part is carried over the back and firmly tied to the collar on the opposite side. This done, the surgeon comes round in front of the patient, and makes fast to the collar the tapes attached to the anterior extremity of the elbow piece. These are to be drawn tight enough to throw the shoulder sufficiently outwards and upwards to remove all deformity. The hand is then supported in a sling, or by a strip of bandage fastened to the collar, The whole apparatus is to be re-examined and tightened daily. The chief indications in the treatment of fracture of the clavicle are perfectly fulfilled by the use of this apparatus; the pad in the axilla throws the shoulder outwards, at the same time that the drawing up of the elbow by the linen bag throws it upwards and backwards. Besides this it is simple, requires no bandaging, and leaves the part injured at all times open to inspection. The apparatus, too, can readily be applied in females, in whom it is all important to obviate deformity. The apparatus was contrived and introduced into the practice of the hospital in

1828, by Dr. Fox, then house surgeon, since which time it has been constantly employed.

Spine.—The treatment in these cases consists in keeping the patient in a state of perfect rest, at the same time that pressure is taken off the projecting parts as much as possible by the application of pillows and other appropriate means, the careful use of the catheter, and obviating any symptoms of inflammation that may set in by the usual treatment. No instance has occurred in the ten years past, in which the operation for raising depressed portions of the vertebræ has been practised.

Humerus.—In fractures situated at the middle of the bone, three or four pasteboard splints are commonly made use of—the outer extending from the top of the shoulder to the external condyle, the inner reaching from the axilla to just above the internal condyle, and the anterior one sufficiently long to reach to the bend of the arm. The roller is applied, as in all other cases, from the fingers up, and the fracture being reduced, and the splints fixed as mentioned, is returned and fastened over them. The arm may then be bound to the body by a broad bandage, or can be left free, supported by a sling. In patients who are very restless, the roller soon becomes loose about the fore-arm and elbow, and necessitates a frequent re-application of it. To prevent, in a measure, this almost daily renewal, the use of an angular board splint well padded, and extending from the axilla to the hand on the inside of the arm is sometimes substituted; one or more short splints being at the same time applied above the elbow. The fragments by this means are held perfectly in place, and the angular splint, by holding the fore-arm at rest, keeps the bandage well and evenly applied for a much longer period than is otherwise possible. During the cure, the angle of the splint should be occasionally changed, in order to prevent any degree of stiffness at the elbow. This mode of dressing is applicable to fractures below the insertion of the deltoid only; for fractures situated high up in the bone it would be manifestly improper.

Elbow.—One of the most common of these, after fractures of the inner condyle, is that in which two fractures and three fragments are present, the humerus being broken transversely just above the condyles, and these last separated longitudinally. All fractures about this part are very troublesome and serious accidents, and to treat them well, requires extraordinary care and attention, whatever method of treatment may be made choice of. Two rectangular splints applied to the inner and outer sides of the arm, and extending from its upper part to the ends of the fingers, are frequently employed with us. When these are used, the angles of the splints should be frequently changed to prevent deformity and stiffness of the joint—those first applied being removed after ten or twelve days, and replaced by others of an obtuse angle. Another method of treatment, which is sometimes pursued at our hospital in fractures about this joint with very satisfactory results, consists in the application of a single board splint applied to the front of the arm. This should be of the width and shape of the limb, well padded, and extending from the upper part of the arm to the ends of the fingers. At first a right angled splint may be used, but at every dressing, (and after the first few days they should be frequent,) it is to be changed for a more obtuse angled one, until finally the arm can be brought perfectly straight. The obtuse angled splints are then recommenced with, and gradually replaced by others less obtuse, until the limb is again brought to a right angle. This plan carefully pursued, will generally prevent deformity, at the same time that it is of more easy application, and more effectually hinders the occurrence of anchylosis than the common mode of dressing.

Fore-arm.—These accidents are treated by means of a roller and two splints, applied in the usual manner. Fractures of the lower end of the radius, which, it may be remarked, are very frequently mistaken for simple sprains, are treated also with two splints; the inside one extending from the upper part of the arm beyond the ends of the fingers, while that on the outside passes below the knuckles. In these, as in all other cases in which a simple fracture communicates with, or is in the immediate neighbourhood of the wrist or elbow joints, the dressings should be removed at the end of ten or twelve days, and after the joint is gently exercised, are to be re-applied. This should be repeated, at farthest, every second day. The same rule should be observed in all cases in which the fore-arm is confined in two long splints, as otherwise great rigidity of the wrist-joint occurs, which is annoying to the patient, and requires a very long time for its disappearance.

Ribs.—Fractures of the ribs are treated by the application of a broad roller to the chest, confining the patient to bed, and the usual general treatment, such as abstraction of blood, &c., when dyspnœa, pain, or other untoward symptoms arise. A large pitch plaster is sometimes used with advantage.

Cranium.—In cases of simple fractures of the cranium with depression of bone, but unaccompanied with symptoms of compressed brain, the trephine has not been resorted to, while, in instances of compound fracture, attended with depressed fragments, even where no symptoms of compression existed, it has been the general practice to remove the portions driven in.

In the following tables, no separate head is retained for compound fractures of the leg or arm, the entries being so made in the books of the institution that it is impossible in all cases accurately to ascertain whether the patient was admitted for simple or compound fracture, and for the same reason under the heads of fracture of the arm, and fracture of the leg, are included respectively, those of the fore-arm, either of one or both bones, as well as of the humerus, and of one or both bones of the leg. It is to be regretted that no record of the period required for the union of the different fractures treated, has been kept. In all cases except a very few where our patients request a discharge, it is the custom of the house to retain them for a considerable time after union—until the stiffness and debility resulting from their injuries and confinement, has been so far removed as to enable the patients shortly afterwards to resume their employments.

1830.	Number.	Cured.	Relieved or by request.	Died.
Fractured thigh	12	10		2
Fractured leg	21	20		1
Fractured patella	3	3		
Fractured cranium	3	2		1
Fractured spine	1		1	
Fractured ribs	4	4		
Fractured clavicle	10	7	3	
Fractured arm	27	25	1	1
Fractured fingers	1	1		
Total,	82	72	5	5

1831.	Number.	Cured.	Relieved or by request.	Died.
Fractured thigh	18	17	1	
Fractured leg	25	22		3
Fractured patella	2	1	1	
Fractured cranium	2	1		1
Fractured spine	2			2
Fractured ribs	4	3	1	
Fractured jaw	2	2		
Fractured clavicle.	9	9		
Fractured arm	27	25	1	1
Fractured fingers	1		1	
Fractured sternum	2	2		
Fractured scapula	1	1		
Fractured toes	1	1		
Compound fractured thigh	1			1
Un-united fracture	1		1	
Total,	98	84	6	8

1832.	Number.	Cured.	Relieved or by request.	Died.
Fractured thigh	8	7		1
Fractured leg	24	18	1	5
Fractured patella	1	1		
Fractured cranium	5	2	1	2
Fractured ribs	3	3		
Fractured clavicle	9	9		
Fractured arm	19	16	2	1
Fractured sternum	1	1		
Fractured pelvis (comp.)	1			1
Total,	71	57	4	10

1833.	Number.	Cured.	Relieved or by request.	Died.
Fractured thigh	14	12		2
Fractured leg	31	26	1	4
Fractured patella	1	1		
Fractured cranium	8	2		6
Fractured ribs	4	2		2
Fractured jaw	2	1		1
Fractured clavicle	8	8		
Fractured arm	20	18	1	1
Fractured sternum	1			1
Fractured scapula	1	1		
Fractured nose	1	1		
Compound fractured thigh	1			1
Un-united fractures	2	1	1	
Total,	94	73	3	18

1834.	Number.	Cured.	Relieved or by request.	Died.
Fractured thigh	10	8	1	1
Fractured leg	36	31	1	4
Fractured patella	3	3		
Fractured cranium	9	4	1	4
Fractured ribs	5	4		1
Fractured jaw	2	2		
Fractured clavicle	10	8	1	1
Fractured arm	20	17	2	1
Fractured finger	1	1		
Fractured scapula	1			1
Fractured toes	1	1		
Fracture	1	1		
Compound fractured thigh	1			1
Un-united fracture	3	3		
Total,	103	83	6	14

1835.	Number.	Cured.	Relieved or by request.	Died.
Fractured thigh	16	12	1	3
Fractured leg	32	26		6
Fractured patella	4	4		
Fractured cranium	2	1		1
Fractured ribs	11	10		1
Fractured jaw	8	4	1	3
Fractured clavicle	9	9		
Fractured arm	27	22	3	2
Fractured finger	1	1		
Fractured scapula	1	1		
Fractured toes	1		1	
Fractured spine	1			1
Fractured pelvis	1	1		
Compound fractured thigh	2			2
Un-united fractures	2			2
Fracture	1	1		
Total,	119	92	6	21

1836.	Number.	Cured.	Relieved or by request.	Died.
Fractured thigh	9	8	1	
Fractured leg	27	20	2	5
Fractured cranium	1			1
Fractured ribs	3	3		

1836.	Number.	Cured.	Relieved or by request.	Died.
Fractured jaw	3	2		1
Fractured clavicle	8	5	3	
Fractured arm	36	32	2	2
Fractured scapula	1	1		
Fractured spine	1		1	
Fractured toes	2	2		
Fractured finger	2	2		
Compound fractured thigh	2			2
Compound fractured knee	1			1
Un-united fracture	1	1		
Total,	97	76	9	12

1837.	Number.	Cured.	Relieved or by request.	Died.
Fractured thigh	6	3	3	
Fractured leg	35	28	2	5
Fractured cranium	5	1		4
Fractured ribs	2	2		
Fractured jaw	1	1		
Fractured clavicle	7	7		
Fractured arm	28	23	4	1
Fractured finger	1	1		
Fractured spine	1			1
Fractured scapula	1	1		
Fractured nose	2	2		
Fractured pelvis	2	2		
Compound fractured thigh	3	2		1
Un-united fracture	1	1		
Total,	95	74	9	12

1838.	Number.	Cured.	Relieved or by request.	Died.
Fractured thigh	13	9	1	3
Fractured leg	34	26	3	5
Fractured cranium	7	1		6
Fractured spine	1			1
Fractured ribs	6	5	1	
Fractured jaw	1			1
Fractured clavicle	6	6		
Fractured arm	24	20	3	1
Fractured finger	2	2		
Fractured scapula	4	3	1	
Fractured toes	2	2		
Fractured os calcis	1			1
Fractured knee (comp.)	1	1		
Un-united fracture	1	1		
Total,	103	76	9	18

1839.	Number.	Cured.	Relieved or by request.	Died.
Fractured thigh	12	6	1	5
Fractured leg	28	24	1	3
Fractured cranium	4			4
Fractured ribs	4	3		1
Fractured spine	1			1
Fractured sternum	1	1		
Fractured clavicle	8	7		1
Fractured arm	22	18	3	1
Fractured patella	2	1	1	
Fractured toes	1		1	
Fractured ilium	2	2		
Fractured elbow	2	1		1
Fractured foot	3	3		
Compound fractured thigh	5	2	1	2
Un-united fractures	2	2		
Total,	97	70	8	19

General Summary of the Fractures treated during 10 *years.*

Years.	Whole number.	Cured.	Relieved or by request.	Died.	No. amputated.
1830	82	72	4	5	1
1831	99	85	6	8	2
1832	71	57	4	10	3
1833	94	73	3	18	5
1834	103	83	6	14	1
1835	119	92	6	21	2
1836	96	76	9	12	4
1837	95	74	9	12	1
1838	103	76	9	18	4
1839	97	70	8	19	8
Total,	959	758	64	137	31

The relative frequency of fractures will be seen in the following table.

	Number.	Cured.	Relieved or by request.	Died.	Amputations.
Fractured thigh	118	92	9	17	2
Fractured leg	293	241	11	41	14
Fractured cranium	46	14	2	30	
Fractured patella	16	14	2		
Fractured spine	8		1	7	
Fractured sternum	5	4		1	
Fractured clavicle	84	75	7	2	
Fractured arm	250	216	22	12	9
Fractured fingers	9	8	1		
Fractured scapula	10	8	1	1	
Fractured elbow	2	1		1	
Fractured nose	3	3			
Fractured jaw	19	12	1	6	
Fractured pelvis	5	5			
Fractured foot	12	10	2		4
Fractured ribs	46	39	2	5	
Fracture	2	2			
Compound fractured pelvis	1			1	
Compound fractured knee	2	1		1	2
Compound fractured thigh	15	4	1	10	
	946	749	62	135	31
Un-united fractures	13	9	2	2	
Total,	959	758	64	137	31

Of the thirty-one amputations performed in cases of fracture, twenty-two were cured and nine died. The details of these have already been given in our statistical account of the amputations made at the hospital, during the years comprised in this report, in the numbers of this Journal for August, 1838, and May, 1840.

No instance of artificial joint followed the treatment for fracture during the ten years included in the report. All the cases observed there during that period having been sent to the institution from distant parts. Of the thirteen cases that were received, nine were cured, two died, one was benefitted, and one left the house a day or two after entrance without undergoing any treatment for it. Of the fractures included in the above tables, many were compound, and many complicated by other serious injuries.

Compound Fracture of the Thigh.—Fifteen of these accidents entered the house between the years 1830 and 1840. Of these four were in children below thirteen years of age. In one of these (ætat. 6) the wound healed kindly, and no bad symptoms followed; in another case (ætat. 7) the patient was carried home by his parents, and recovered; in a third (ætat. 11) the patient died; and the last (ætat. 12) recovered with a good limb. Of the eleven cases above thirteen years of age, seven died within two weeks after the receipt of their injuries, an eighth (ætat. 18) lived three months, and died of metastatic abscess; a ninth (ætat. 56) died at the end of eleven months of chronic diarrhœa, bony union at the time being perfectly firm, though the wound had not closed; and the other two cases (ætat. 21 and

15) recovered with good limbs, though in the first case not till after a residence in the hospital of twenty-three months, and the removal of a necrosed portion of bone six inches in length.*

Dislocations.—With the exception of a few of the luxations of the shoulder and hip, the cases included in the following table were of recent occurrence, and in all of these cases the bones were reduced without accident of any sort. Two out of the three luxated shoulders marked as discharged by request, were incurable. One of them existed in the person of a young sailor, aged 20, who was admitted Dec. 4th, 1830, with a forward dislocation of the head of the humerus of sixty-two days standing. Some days after his entrance, an attempt was made by Dr. Hewson to reduce it by means of the pullies. Great force was used, and the efforts were kept up for a long time, but without success. After the lapse of a short time, by request of the patient, strong efforts were again made to reduce it, and kept up for a considerable time, but with no better effect than on the first attempt.

The other case was a forward luxation of three months' standing, which it was found impossible to reduce by any proper degree of force, and has already been given at length in a former report.†

Among the cases of dislocation at the shoulder cured, are those which had been out twenty-six, forty-five, fifty-three, thirty-one, ten, twenty-one, and thirty-one days, respectively.

The only instance of luxated hip of long standing, in which attempts at reduction were deemed proper, was that of a lad, ætat. 12. The signs of dislocation, upwards and backwards on the ileum, of the right femur, were well marked, with shortening of the limb to the extent of two inches. The accident had happened fourteen weeks previously, and its nature had been mistaken by the person called to visit him. The injury had been produced by a fall from a height, and the head of the bone was to a certain extent moveable by rotating the limb. After the application of the pullies he was bled largely from the arm, and took a solution of tartar emetic, by which means his system became completely relaxed. Pretty strong extension was then made from above the knee, and after this had been kept up near half an hour, the head of the bone was drawn outwards by means of a towel, and the knee rotated. During these efforts a sudden crack was distinctly heard. The apparatus was immediately removed. The boy was now exceedingly prostrate. Much more motion than before the trials existed at the hip; the toes could be turned much further outwards, and the knees could be to a certain extent separated. The boy did not complain of pain on rotation, and took a few steps upon the limb some time after being released. It was at first feared that a fracture at the neck of the bone had been produced, but repeated close subsequent examinations proved this not to be the case. He left the institution twenty-two days after the trial, with more motion in the limb than he had previously had.

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* This patient, I have been informed, entered the Baltimore Infirmary a few months after his discharge from our institution, where he died in consequence of some disease of the injured limb.

† American Journal for February, 1840.

Table of the Dislocations treated during 10 *years.*

	Number.	Cured.	Relieved or by request.	Died.
1830				
Dislocated shoulder	3	2	1	
1831				
Dislocated shoulder	3	2		1
Dislocated hip	4	4		
Dislocated astragalus	1			1
Dislocated cervical vertebræ	1			1
Dislocation and fracture	1	1		
1832				
Dislocated shoulder	3	3		
Dislocated hip	2	2		
Dislocated jaw	1	1		
Compound dislocated thumb	1		1	
1833				
Dislocated shoulder	4	4		
Dislocated hip	1		1	
Dislocated wrist	1	1		
1834				
Dislocated shoulder	6	6		
Dislocated hip	1	1		
Dislocated ankle	1			1
Dislocated wrist	2	2		
Dislocation	1		1	
1835				
Dislocated shoulder	7	7		
Dislocated hip	2	2		
Dislocated ankle	1	1		
Dislocated elbow	3	3		
1836				
Dislocated shoulder	6	5	1	
Dislocated hip	3	1	1	1
Dislocated elbow	2	2		
Dislocated clavicle	1	1		
Dislocation and laceration	1			1
1837				
Dislocated shoulder	6	6		
Dislocated hip	1		1	
Dislocated clavicle	1	1		
Compound dislocated thumb	1	1		
1838				
Dislocated shoulder	7	7		
Dislocated hip	2	2		
Dislocated radius	1	1		
1839				
Dislocated shoulder	4	3	1	
Dislocated hip	1	1		
Dislocated jaw	1	1		
Dislocated clavicle	1	1		
Dislocated elbow	2	2		
Dislocated wrist	1	1		
Dislocated finger	1	1		
Dislocated great toe	1	1		
Total,	94	80	8	6

General Summary of the Dislocations treated during 10 *years.*

	Number.	Cured.	Relieved or by request.	Died.
Dislocated shoulder	49	45	3	1
Dislocated hip	17	13	3	1
Dislocated astragalus	1			1
Dislocated cervical vertebræ	1			1
Dislocated jaw	2	2		
Dislocated ankle	2	1		1
Dislocated elbow	7	7		
Dislocated wrist	4	4		
Dislocated clavicle	3	3		
Dislocated radius	1	1		
Dislocated finger	1	1		
Dislocated great toe	1	1		
Compound dislocated thumb	2	1	1	
Dislocation and laceration	1			1
Dislocation and fracture	1	1		
Dislocation	1		1	
Total,	94	80	8	6

Some of the dislocations included in the above table were accompanied by other severe injuries, and in all the instances in which death followed, it was from some other cause than the luxation, except those of the astragalus and vertebræ. Simple dislocation of these bones are very rare forms of accident; a detailed account of the first of them I have already published in vol. XX of this Journal. The luxation of the spine occurred at the fifth cervical vertebræ, and was unattended by any fracture. The following are its details:—Thomas Lee, ætat. 30, was admitted early on the morning of September 9th, 1831. At 11 o'clock on the previous night, while in a state of intoxication, he had been thrown headlong against the curbstone from a gig that he was driving at a furious rate. There was complete paralysis of the lower extremities, chest, and lower half of the trunk. He complained of great pain over the lower cervical vertebræ; but so much swelling and ecchymosis existed at this part, that the state of the spinal column could not be satisfactorily ascertained. When placed in an erect position he cried out from pain, unless his forehead was firmly supported; and, when laid on his back, his head was seen to be thrown a little forwards, and pushed down upon his chest. The hands and arms retained their sensibility, but he was unable to double his fist, or seize any thing firmly. His respiration was hurried, difficult, and performed entirely by the diaphragm; he complained incessantly of being unable "to breathe properly." Priapism existed, and continued constant till the period of his death. From the existence of the above symptoms, the case was looked upon as one of fracture, with consequent luxation of the lower cervical vertebræ. He was placed on his back, with the head and shoulders slightly elevated, had his bladder, which was distended, emptied by the catheter; and, as his pulse was full, he was bled moderately. By 10 A. M. his sufferings had become so great, that Dr. Barton, the surgeon in attendance, deemed it proper to make some attempt to relieve them, by cautiously making extension and counter-extension. The extension was made by means of a handkerchief passed under the chin, the ends of which were tied firmly to the head of the bedstead, and the counter-extension was kept up by securing the ankles with a broad bandage, and fastening it to the foot-board. The patient expressed himself as being decidedly easier after the extension was made. On visiting him on the morning of the 11th, I found him without pain, and with no apparent change in his symptoms. His position was in no way changed; and, while in the room engaged with another patient a few feet distant, my attention was directed by the nurse to Lee, and on approaching him I found him dead.

Autopsy.—A considerable effusion of blood was found in the cellular tissue beneath the skin, as well as between the muscles on the back part of the neck. The yellow ligaments and the ligamentous fibres, holding together the oblique processes, were ruptured, and the fifth cervical vertebra was thrown forwards upon the sixth. Examined in front, the vertebral ligaments were found also to be ruptured, and the inter-vertebral substance torn up, so that the body of the fifth was completely separated from, and projected over, the sixth. Accurate examination, after the removal of the upper part of the spinal column, proved that no fracture existed, and that the injury consisted in a simple displacement of both body and processes of the vertebræ. The examination was made twenty-eight hours after death, but, owing to the heat of the weather, putrefaction had considerably advanced, and the spinal cord, the coverings of which were uninjured, was so much softened in its whole extent, that its state at the point of injury could not be determined.

ARTICLE III. *Report on the Medical Topography of Madison Barracks, Sacket's Harbour, N. Y., and the Diseases which occurred there between the* 1*st of August*, 1838, *and the* 30*th of September*, 1840. By THOS. HENDERSON, M. D., U. S. A.

THE post at Sacket's Harbour was occupied by portions of the 8th regiment United States infantry, sometime in May, 1838. The numerical force at Madison Barracks fluctuated in the winters of 1838–9, and 1839–40, as detachments were sent to outposts. I was with three detachments at Oswego, Ogdensburg, and Morristown, and from what occurred there the representations in the tables are accurately estimated from an average force of 450 men. In May and June, 1840, the command was reduced to two skeleton companies, that were rapidly filled up to one hundred and fifty men; while the slender force in June accounts for no reports of sick during that month.

The station at Sacket's Harbor is in latitude N. 43° 50′, and in longitude E. 1° from Washington. It is distant from the ocean about 320 miles—from Lake Ontario 8 miles, and is situated on the southern side of the bay formed by the entrance of Black River into the lake. The colour of the water of this river, which is the third in size in the state of New York, is dark, from whence the stream takes its name; and the water is not drunk by those who live on the river, under an impression that it is not wholesome—it is certainly unpleasant to the taste, being greatly inferior to the water taken from the lake. The surface of the lake is 230 feet higher than that of the ocean, and the plain of the parade ground is 40 feet elevated above the surface of Lake Ontario.

The grounds around the garrison are level; the soil is dark with much clay, and rests on a stratum of limestone, which is in depth from the surface from one to three or four feet. In wet seasons the grounds around the post are wet and boggy, and even after ordinary rains the nature of the soil and the superficial calcareous stratum tend to keep the earth moist, favouring terraqueous exhalation. Within the pickets the draining is good, and the gutters, &c. well policed. There are no marshes near enough to the garrison to affect its health. The physical aspect of the surrounding country is undulating; the soil generally rich, and the population healthy. The site of the post is remarkably exposed to the bleakest blasts from the lake in winter and spring; though no residence can be more delightful than Madison Barracks during the summer and autumn.

The annals of Sacket's Harbour show that formidable diseases have prevailed in winter, summer, and autumn. During the war of 1812, the epidemic called pneumonia typhoides originated on the lines, and was severely felt at this place. In the summer (July) of 1813, "from one-tenth to a fifth of the crew of Com. Chauncey's squadron were on the sick report at the harbour." In August more than one-sixth of the seamen were left on shore; and Cooper's Naval History tells us that at one time in this season, (1813), the ship Madison had nearly half of her complement on sick list. From the same source we learn that in the winter of 1814, the sickness of the "Harbour" was of the gravest character. One half of the crew of the Madison was sick, and one-fifth died. In the summer of 1814, the operations of the squadron were delayed by the illness of the mechanics at the Navy-yard.

Since the peace of 1815, I learn from intelligent officers of the army stationed here, and from respectable citizens, that the place has been healthy. Winter and summer diseases have been mild and tractable, and autumnal fevers neither common nor fatal. The second regiment of infantry was at this post for two or three years, about 1824 to 1826, and was free from disease. Troops were subsequently stationed here and enjoyed health, while the neighbouring country had similar exemption from disease.

In the fall of 1838, the 8th regiment of infantry was in force at Madison Barracks. Small detachments had been at the post during the whole year, and general health prevailed. In August, September, and October but eight cases of fever (continued) occurred. During the winter of 1838–9, and in May 1839 some fever appeared, and some cases terminated fatally from cerebral disease. I was at several stations on the frontier during that winter, and saw but one case of the fever, and that was brought convalescent from the Harbour to Oswego. In May and June diarrhœa became very rife at Madison Barracks with some fatal cases of continued fever. In July and the subsequent months the diarrhœa was almost universal. Cases of fever became more numerous in July and August—several were fatal. The morning sick report, confined exclusively to officers and soldiers, was sometimes as high as eighty; and many other in families not borne on the sick report. On the 23d of August I reported for duty, and found disease prevailing to great extent in two forms, viz: diarrhœa and fever, and the two combined.

Let it be here observed that the summer of 1838 was exceedingly hot and dry; the summer of 1839 cool and seasonable as to rain. Except at Charleston, S. C. and in Michigan, the most general health existed in 1838, while in 1839, with a season throughout favourable to health, so far as moderate heat and moisture from rain are concerned, epidemic dysentery prevailed in New England, the most malignant endemics desolated New Orleans, Mobile, Pensacola, St. Augustine; fearful disease raged in Georgia and Illinois, as well as in many towns on the Mississippi—and, what is to the matter in hand, Sacket's Harbour and its vicinity were unusually sickly—as was the regiment quartered at Madison Barracks. In the neighbouring country places, usually healthy, suffered from sickness and mortality. Yet the sickness was circumscribed so far as the military stations were concerned, for the troops at Rochester and Buffalo were healthy; at Plattsburg remarkably so. Nearer to Madison Barracks, at Ogdensburg, on the St. Lawrence, on one side, and at Oswego on the lake, on the other side, there was perfect health; while on each side, between Ogdensburg and Oswego, several places were very sickly. Now, *sine causa evidente*, the 8th regiment, in all its departments, officers, soldiers, and families, besides citizens employed on the works, were almost universally affected with diarrhœa; and as autumn approached, continued fever became very general; in August, September, and October, one hundred and ten cases of continued fever appeared among the soldiers and officers alone.

At a military station, where, in the autumn of 1838, men were concentrated under disadvantageous circumstances, general health prevailed during a season of unexampled heat and drought; while in the summer and autumn of 1839, the succeeding year, during an equable and pleasant season, at the same military station, hundreds of cases of diarrhœa, intermittent and continued fever arose, when the disadvantages of 1838 were removed;—we say it is very natural to look for a cause for such difference. So far as the immediate *locale* is concerned, every thing was favourable to disease in 1838, and the very reverse in 1839. In 1838, the barracks were repairing, and being cleaned, the sleeping rooms wretchedly ventilated, the post generally unpoliced, and the men not accustomed to the water—while, in 1839, the works were completed, the company quarters much improved in ventilation though still bad in that respect, the men accustomed to the water, and the police of the post admirable. Within the pickets no obvious cause existed. The level land in the vicinity was more moist in 1839 than in the preceding year, but not more so than in many seasons in the course of the last twenty years, when no sickness prevailed in the garrison or in the village. This was not a reasonable cause for the difference.

It is known that during the past four or five years, the lakes have risen about five feet, and they are now falling. I see nothing in the laying bare annually of a few inches of lake shore that could cause sickness; for in this vicinity no grounds have been covered or laid bare by the rise or fall of water so as to afford malaria. The reports from the British stations on the opposite shores of the lakes, show conclusively that no influence on health has grown out of this phenomenon in these vast interior seas. The fall of the water in the lakes cannot be shown to be a cause of disease.

Again—the opinion is that the water is bad, and has caused disease. *A fortiori*, it should have done so more conspicuously in 1838 than in 1839. Of those who have died of fever, the majority were of persons accustomed to the water of this lake region; and no disproportion of sick, so far as foreigners are concerned, favours the idea of water causing the sickness. Nor have troops stationed here during past years been affected by water in this way; the water is always the same, while fever has rarely appeared since 1816.

It has been said that the imperfect ventilation of the barracks produced the sickness. If so, why not more conspicuously in 1838 than in 1839; and why did the same fever prevail in the neighbouring country? Nor is there any reason to believe that any defect in the quality of the rations produced the fever.

A few practical observations are suggested by some of the diseases in the table.

Catarrh is very conspicuous for the number of cases. Though frequent, it was in no instance fatal. Soldiers are very few of them sufficiently advanced in life to make catarrh formidable. The inflammation of the tracheal and bronchial mucous follicles was readily subdued. Pain over the region of the frontal sinuses was the most unpleasant symptom, next to the cough. Slight fever with frequent pulse; inflamed watery eyes, cough, with soreness of the pulmonary mucous lining, made it necessary in many cases to confine the patients; and bleeding, mucilaginous drinks, expectorant mixtures, with minute anodyne doses, were in all cases sufficient.

Diarrhœa.—Of the seven hundred cases of diarrhœa, three of the chronic form proved fatal. In no part of the United States, have I, during any one season, seen this disease more frequent or less fatal. The habits of soldiers, their exposures, their negligently cooked food, make dysentery and diarrhœa almost technically army diseases; and when the reckless feeling of the men as to personal security, and their neglect of diarrhœa in most instances are considered, it is remarkable that so few cases became fatal or chronic. The complication of this disease with fever will be subsequently noticed. It will be seen that dysentery was unknown at this post, and at the outposts. The irritation of the intestinal canal was confined to the small intestines, the colon and rectum escaping entirely that morbid condition constituting colitis or dysentery. How different this from what takes place in hotter latitudes. The principal cause of the looseness was a copious flow of yellow bile, induced in a great number of instances primarily by the water, and perpetuated by the exposures and indiscretions of soldiers. This lientery of the liver kept up frequent loose stools without tenesmus. There was pain in the bowels, but in the region of the small intestines. The pulse was frequent and soft; skin of natural temperature, and very often profusely perspiring. Tongue slightly white and moist.

For this form of disease, unaccompanied with headache, vertigo, nausea, or pain in the limbs, very simple treatment sufficed. Castor oil, rhubarb, and magnesia, with or without Dover's powder, and this anodyne in full dose at night controlled the cases; and abruptly too, if imprudence in diet and drinking the bay water, or indeed the limestone water, were not operating to keep up the irritation on the mucous tissue, and through it on the liver.

But in numerous instances the diarrhœa was attended by another group of symptoms that were important to the patient's safety. The skin, instead of being moist and cool, was warm and dry; headache, vertigo, nausea, pain in the back and limbs, tongue yellow, fur in centre, red tip and edges, with debility, marked a form of diarrhœa which, if not arrested by suitable care and treatment, the looseness ceased to be conspicuous, while febrile phenomena became continued, well marked, always formidable; often fatal.

The first and essential step here was to take the men from quarters into hospital. Hospital surveillance and advantages, comprising rest; suitable diet, and remaining in bed, were indispensable. Ten grains of calomel, with castor oil, brought away dark or greenish stools, sometimes mixed with blood, diminished the frequency of the evacuations, and relieved the back and head. The prudent administration of ipecacuan and calomel, for antimonials were inadmissible, with cupping to the neck, soon brought the vascular and nervous systems into a state inviting the use of Dover's powder, with or without blue mass, at night. These cases terminated favourably. It added to the unpleasantness of the ease that it was so often attended with catarrh; but unless the complication was merged in distinct fever, mild anticatarrhal prescriptions sufficed. The table shows how diarrhœa was protracted into the winter months—and the whole view displays the agency of causes on the gastro-pulmonary mucous tissue in producing the conspicuous diseases of the post.

Febrile Diseases.—The attention of the reader is now directed to this important class of diseases. The table shows that 410 cases of the intermittent, continued and inflammatory fevers, have been treated. That the mortality from continued fever was 15, being nearly one-half of the whole number of deaths. For this far north region the whole list of malarial disease is at first view large; but from the earliest settlement of the country on the lakes, a fever has occasionally appeared called popularly the "lake fever;" and intermittents on the shores of Ontario and Erie lakes have been very common. Some localities have been more severely affected with fever than others, and Sacket's Harbour perhaps as often as any other. During the war of 1813, when the troops were so mortally sick with diarrhœa and fever, it was ascribed to the causes alluded to above in the topographical sketch; and especially to bad provisions, and great exposure to cold and to night air from the want of quarters. These causes, except the water, have not existed here during the period embraced in this report.

Recent reports on the medical statistics of the British army throw some light on the diseases of this northern region; and some of the results of the reports have a bearing here, and will be summarily given.

1. In Nova Scotia and New Brunswick the causes to which intermittents are ascribed, such as marshy ground, vegetable matter decayed, &c., exist abundantly, while this form of fever is unknown there.

2. Low and alluvial as Fredericktown, and other stations in New Brunswick are, and extensive as are the reputed sources of malaria, febrile diseases are but little known—amounting to a "marked exemption from all diseases of a febrile nature."

3. Whereas in Upper Canada, and in the same temperature, there is a great amount of malarial disease.

4. In Upper Canada *inland* settlers, though living in reputedly malarial situations, marshy, foggy, &c., are free from disease, while those on the lake shores are sickly.

5. Common continued fever prevails in Lower Canada more generally than in the upper province, and intermittents are comparatively little known. Intermittents abound in Upper Canada; and it is well known that on the American side intermittents are, *cæteris paribus*, much more common on the shores of Lake Erie than on those of Ontario.

6. These reports show that the rise and fall of Lake Ontario have no influence on the sickness of the adjoining countries.

I shall make a few practical observations on the fevers of the table.

Under the head of fevers, 410 cases are noted. Of *intermittents* little need be said, as no case was fatal. They are strikingly different from intermittents at the south, in that they are not attended with any sign of local congestion during the paroxysm; nor have I seen in a single case any one of the sequelæ that render intermittents so formidable and obstinate in southern climates—no hepatic enlargement, nor spleen congestions, nor dropsical infiltration—nor yet the sallow jaundiced hue that marks those who live in localities habitually miasmatic. No case of quartan fever occurred to me. Intermittents were readily subdued with sulph. quin. I believe the majority of cases were brought from recruiting stations, especially at Cleveland. Observe how numerous intermittents were in May and June of 1839, and how diarrhœa commenced and prevailed during the same months.

The formidable disease in the regiment was the continued fever. The greatest mortality of the number sick of fever in any one month, occurred in May, 1839. At that time I was not stationed here, and have no means of ascertaining what peculiarities belonged to those vernal cases. The first case I met with was at Oswego, in December, 1838. The man had been brought sick from Sacket's Harbour; had a long attack of fever, the conspicuous features of which were shattered nervous energy, delirium, subsultus tendinum, dry dark tongue, weak frequent pulse—the typhus gravior. Stimulants, tonics, and blisters were successfully used. No other case occurred at that post. On the 23d August, 1839, I reported for duty at Madison Barracks, and was in charge of the hospital until 15th October. Continued fever prevailed to great extent among the soldiers, officers and families. Diarrhœa was universal—but intermittents were scarcely seen.

I shall not enter into any minute detail of symptoms, but confine myself to those aspects of the fever in which it differed from malarial fevers of the middle states.

In the first place, there was more or less diarrhœa with almost every case. I scarcely recollect an instance in which diarrhœa had not preceded, for some longer or shorter period, the lapse into fever. Again—the fever was attended in many instances with a moist skin, even during the exacerbations; and these two things, the diarrhœa and the moist skin, constituted the chief peculiarities of the fever. They prevented the full, strong or hard pulse; on the contrary, produced a soft, somewhat voluminous, always frequent, sometimes weak pulse. Giddiness, vertigo, were constant concomitants of the headache; and they merit notice as probably connected with the cerebral determination that was so fatal in many of the cases. The brain was disordered in various ways; in one case furious delirium—but most frequently delirium commencing at night, increasing and disappearing as the exacerbation rose and declined towards morning—finally, stupor and coma. What of pain existed elsewhere was masked by the cerebral irritation. In two cases there was slow, weak pulse. The eye indicated the approach of cerebral collapse, becoming dull and suffused—the tongue dark and dry—stools watery, greenish or brown—subsultus tendinum, coma and stupor closed the scene. After cerebral irritation was distinctly formed, the course was that usual to such a form of fever everywhere;, varying in no respect from what I have seen in the southern and middle states.

And but for the irritable mucous membrane, and the open moist skin, the treatment would not be peculiar. The looseness of the bowels and the perspiring skin prevented that state of the arterial system which calls for general blood-letting. It was very seldom admissible. Cupping on the abdomen or on the temples or neck, according to the seat of pain, was done—but not with very apparent or positive benefit.

Again—the very loose condition of the bowels made it necessary to select cautiously the cathartics. Saline laxatives, senna and all drastics were utterly forbidden; while the secretory apparatus demanded certain alterative aperients. Calomel was the appropriate cathartic, combining, as it does, powers controlling the secretions, aperient to the intestinal canal, while it allayed the irritability of the bowels; I saw no reason to give it in large doses. Ten grains was the cathartic dose, and, where there was diarrhœa, as much carb. calc. was added. I have practised in autumnal and malarial fevers in the various climates of the United States—on the northern frontier, in severe fever opposite West Point, in various parts of Virginia, in Florida, and for thirty years. I have seen all the forms of fever in all classes of persons, natives, foreigners and coloured persons; and my experience is as decidedly in favour of the use of small doses of calomel, as my speculative views are in opposition to large doses. My usual prescription is ten grains of calomel with five of pulv. antim., or, in this fever, with ten grains of carb. calc. In severe cases of fever, the above doses are repeated in six hours, when, with the aid of ol. ricin., saline laxatives, or an enema, the legitimate objects are attained, viz. impression on secretory function and intestinal evacuation. To control the secretory apparatus, small doses are required from time to time throughout the disease. I have sometimes given *large* does of calomel, but candour requires me to say, that empirical rather than rational impulses governed me, and the result may be readily anticipated.

Again—absorbents and alkalies had the finest influence in allaying an irritable, and so far a morbid, state of the mucous tissue; diminishing the frequency of the stools, and thus saving the constitutional resources of the patient from great debility. I combined carb. calc. with calomel—gave it in free quantities with antimonials, which last could not be borne without it. The spir. æth. nitros., which judiciously used has such admirable effect in protracted fever, was given with carb. calc. and bi-carb. potass. This absorbent and alkaline treatment had positive and powerful agency in bringing the mucous membrane into a state to ensure the effect of calomel and antimony; and, as the bowels became less irritable, the skin lost that moist, unhealthy state above alluded to.

Blisters were important auxiliaries, applied as occasion required to the abdomen, to the back of the neck, or to the extremities. Where the signs of cerebral irritation were appearing, shaving the hair entirely from the head, and covering the whole scalp with a blister, warded off in some instances that dangerous local determination.

Many cases of fever, and some severe ones, occurred among the officers and their families, and among the laundresses. None of these terminated fatally, showing that the fever was not inherently severe; and leads to the legitimate inference, that soldiers are, from causes obviously not necessary to enumerate here, liable to more formidable attacks of disease, and, consequently, oftener fall victims to such attacks.

In some instances diarrhœa was suspended on the access of fever—here the abrupt suppression favoured an earlier and more formidable brain disease. Here and there fever was unpreceded and unaccompanied with diarrhœa. The less complication of course the less danger.

I regret that in the autumn of 1839 I did not more frequently give emetics in the forming stage of fever and in the severer forms of diarrhœa. Emetics have been too much neglected of late years in the early states of fever, at least by me. During the fall of 1840 there were upwards of 20 cases of fever among the soldiers. These cases were ushered in with nausea, loss of appetite, giddiness in the head, and some had vomited. In these instances they took gr. i ant. tart. with grs. xxx pulv. ipecac., with the highly satisfactory result of cutting short the disease in every case but four, and some of these last were obviously benefitted by the emetic.

Recoveries from the fever were rapid. No sequelæ interfered; and good diet with light bitter infusions were all sufficient.

Pulmonary Diseases.—Nearly 600 cases of catarrh are on the register, and no death from that cause; of acute or chronic bronchitis none died; of 26 cases of pneumonia two died, and one of pneumonia typhoides. In several points of view these pulmonary diseases are interesting. Frequent as was catarrh, it is remarkable that it was so harmless, and that it did not terminate more commonly in pneumonia and bronchitis. The proportion of these two last named diseases was small—in all 50 cases in a command averaging 450 for 26 months—and the fatality still smaller, for the whole class of pulmonary diseases occasioned only six deaths.

The number of cases of phthisis developed in the command was very small. The general opinion is, that, in a climate so cold and in the fall and spring so variable in temperature, phthisis is a more common disease than it is further south. A greater development of the disorder might reasonably have been expected. I cannot call to mind more than one case, the seeds of which were not in existence previous to enlistment; nor did other pulmonary inflammations and irritations seem to have the least influence in developing tubercular degeneration. Including what appeared in the families there were full 3000 cases of disease in twenty-six months, in a cold and variable climate, and six cases of phthisis occurred, nearly all of which were in active predisposition or in actual pulmonary irritation at the time of enlistment.

Relative circumstances have excited in me on this subject painful interest, leading me to close inquiry. During my service on the frontier, for now upwards of two years, I have endeavoured to ascertain, from every source, the amount of phthisis that exists between latitude 42 and 45, and on the lake shores as well as in the interior, with a view to compare the frequency of the disease here and in milder regions of the United States. I have inquired of intelligent medical men, of residents who, from the earliest settlements, had opportunities of judging, and from these, the best sources of information that can now be had, I am convinced that phthisis is not more common in this latitude than in Virginia; and that pneumonic inflammation generally is much less so, especially that formidable disease *bilious* pleurisy. I have not observed that, among families from the south who have resided or remained for some years here, the climate had any influence in exciting tubercles. On this subject it is exceedingly desirable to collect satisfactory information. The British army reports, already alluded to, have thrown some important and unexpected light on this subject. Their tables show that there are more lung diseases among the troops stationed in the island of

Bermuda and in the Mediterranean than among the forces in the North American provinces, and similar results grew out of other comparative observations, and this too while advantages of barracks, &c., was in favour of these stations in the mild latitudes. I know that professional and popular sentiment are not prepared for this, yet what I have learned from the most credible sources satisfies me that we have yet to learn much on this point.

Rheumatism occupies a conspicuous place in the list of diseases, yet affords no matter for remark. The cases were, with few exceptions, slight.

Delirium Tremens.—One case is recorded. The reader will scarcely believe that in such a command, and for such a length of time, but one soldier would have delirium tremens. The term "Intemperance" was affixed on the register opposite three names, but I could not trace the cases precisely. That many soldiers had this affection is very certain, but they were cured in the guard-house without appearing at sick call. It is well known that ardent spirits of a wretched quality is exceedingly abundant and cheap on the frontier, so that there was no lack of subjects disposed to indulge, nor of the means of gratifying, their propensities. Be that as it may, there was no delirium tremens, or, if there were, the remedy was the guard-house.

Liver Disease.—The British reporters remark with much point that if intemperance caused liver disease, it should prevail to great extent in Canada among soldiers. Such, however, is not the fact, it is exceedingly rare among them.. Not a case is found in our tables. Concurrent causes appear to be necessary to engender hepatic disease, for the same amount of intemperance in the West Indies would excite a great deal of that affection. A few cases of *icterus* are noted, but they were seen during the prevalence of autumnal fever. It is very common in the southern states to see, during the autumn, persons going about perfectly but harmlessly jaundiced. The cases in our table were forms of the malarial disease then rife, and not the effect of abuse of ardent spirits. One complication of hepatic disease I have never seen here, the bilious pneumonia, a disease not only frequent in the malarial regions of the middle states, but very fatal in some seasons. It is curious to see, that while malarial diseases are so perfectly displayed in the intermittent forms of fever and the continued in this northern climate, they have never been, to my observation, sophisticated as they are to the south with concomitant and consequential complications in which the liver is so conspicuously concerned.

Table exhibiting the Principal Diseases, and the Mortality at Madison Barracks, Sacket's Harbour, N. Y., from Aug. 5th 1838, *to the 30th Sept.* 1840.

Months.	Bronchitis Acute.	Bronchitis Chronic.	Catarrh.	Tonsillitis.	Diarrhœa.	Fever Intermittent.	Fever Continued.	Fever Inflammatory	Icterus.	Lumbago.	Ophthalmia.	Rheumatism.	Pneumonia.	Pneum. Typhoides.
1838.														
August	-	-	2	-	8	1	5	2	-	-	-	2	-	-
September	-	-	21	-	56	23	3	1	1	-	5	5	-	1
October	-	-	70	5	26	16	-	-	-	-	1	6	-	-
November	-	1	35	2	40	7	4	-	-	-	1	5	2	-
December	-	-	29	-	16	1	1	-	-	-	2	11	-	-
1839.														
January	-	-	19	3	10	2	-	-	-	-	1	6	4	-
February	-	-	11	-	3	-	1	-	-	-	-	9	-	-
March	-	-	21	1	6	5	-	-	-		1	4	1	-
April	-	1	19	-	52	22	2	-	-	2	7	10	-	-
May	-	1	37	1	37	58	5	-	-	-	3	7	2	-
June	-	-	19	4	72	20	5	1	-	-	1	8	2	-
July	-	1	26	1	68	15	11	-	2	-	1	12	2	-
August	-	2	11	2	113	8	19	-	1	-	4	2	-	-
September	-	-	10	3	38	6	42	-	3	2	-	4	-	-
October	-	-	15	2	51	5	46	-	3	2	1	6	1	-
November	4	-	22	2	36	10	14	-	2	-	2	4	2	-
December	4	-	33	3	24	1	3	-	2	-	5	4	-	-
1840.														
January	5	1	31	-	13	2	2	-	1	-	-	6	2	-
February	-	-	34	3	15	1	-	-	-	-	2	5	1	-
March	1	-	28	-	26	4	-	1	2	-	9	8	2	-
April	6	1	46	-	27	7	8	-	-	-	8	3	1	-
May	-	-	-	-	-	-	-	-	-	-	3	-	1	-
June	-	-	-	-	-	-	-	-	-	-	-	-	-	-
July	-	-	-	-	9	-	-	-	-	-	3	3	-	-
August	-	-	1	-	7	2	4	-	-	-	-	2	2	-
September	-	-	2	-	15	-	13	1	1	-	-	2	1	-
Total	20	8	542	32	768	216	188	6	18	6	60	134	26	1
Deaths					3		15					1	2	1

The following table exhibits the diseases not included in the preceding one, and accidents which occurred at Madison Barracks, during the period embraced in this report, with the number of cases of each, and their mortality.

	No. of cases.	Deaths.		No. of cases.	Deaths.
Abscess,	68		Contusion,	70	
Asphyxia,	1	1	Debility,	11	
Atrophy,	1	1	Delirium Tremens,	1	
Burns,	7		Dysentery,	3	
Cephalæa,	26		Dyspepsia,	7	1
Cholera Morbus,	4		Dysuria,	4	
Colic,	22		Epilepsy,	3	
Concussion of Brain,	3	1	Erysipelas,	3	
Constipation,	38		Fistula Ani,	3	

	No. of cases.	Deaths.		No. of cases.	Deaths.
Fracture,	9		Peritonitis,	3	2
Frost bite,	24		Phrenitis,	1	1
Gonorrhœa,	33		Phthisis,	6	3
Hemorrhoids,	9		Rubeola,	1	
Hernia,	4		Scabies,	44	
Herpes,	44		Scrofula,	3	
Hydrocele,	1		Secretive Urethra,	1	
Insanity,	6		Splenitis,	1	
Inverted nail,	2		Spinal irritation,	1	
Luxation,	8		Sprain,	53	
Nyctalopia,	2		Syphilis primary,	12	
Odontalgia,	5		do. secondary,	6	1
Orchitis,	6		Tinea Capitis,	1	
Otitis,	15		Ulcer,	32	
Paralysis,	2		Urticaria,	3	
Paronychia,	9		Wounds,	144	

Total number of cases 2810, deaths 33, being 1 death in every 85 sick. Total cases of febrile diseases 410, deaths 15, being 1 death in every 27 cases.

In May and June, 1840, there were only two skeleton companies of the 8th regiment left. They rapidly filled up to 150 men.

The cases do not include those that occurred in the families of officers and of laundresses.

Twenty-five were discharged the service during the period embraced in the report, and for the following diseases:

Chilblains,	2	Joint weakness,	1
Diarrhœa, chronic,	6	Ophthalmia,	4
Dyspepsia,	1	Phthisis,	1
Hernia,	1	Paralysis,	1
Hydrothorax,	2	Rheumatism,	2
Insanity,	3	Scrofula,	1

ARTICLE IV. *Case of Absence of the Uterus.* By E. P. BENNETT, M. D., of Danbury, Connecticut.

IN December, 1833, I was called upon to prescribe for Miss ———, a young lady of about 18 years of age, for retention of the catamenia. She had suffered regularly every month, for the last two years, the usual symptoms of indisposition attendant upon menstruation. She was well formed, of good stature, with well developed breasts. I prescribed for a length of time the usual remedies in such cases, but contrary to my expectations, without the least benefit. Her general health was improved, but the menses did not appear. The obstinacy of the case led me to suspect organic obstruction. I mentioned this to her friends, and proposed an examination, to which she finally consented. The external organs of generation were perfectly developed in every respect, and perfectly natural. Upon introducing my finger into the vagina, I found that this canal terminated in a cul-de-sac, at the distance of two inches from the os externum. It did not appear like a membrane stretched across this canal, but like a complete obliteration of it. There was no indication of any accumulation of menstrual fluid behind it, although there was a slight enlargement of the abdomen. I introduced a common lancet into this substance the length of the blade, but it penetrated into no cavity; the hæmorrhage was considerable, and as I had had no experience in such cases, I desisted from doing any thing more. Soon after this my patient married, and I lost sight of her for several years. In August, 1840, she again applied to me for relief. She stated that she had enjoyed poor health generally, but occasionally she had had *monthly periodical discharges of blood per anum*, which relieved her, but of late they had entirely ceased. I examined her again, and found her in exactly the same condition as before marriage, only the finger could be introduced a little farther by carrying the obstruction before it. I then introduced a finger into the rectum, and a silver catheter into the bladder, and searched for a uterus, but could detect nothing of the kind, my finger coming in contact with the catheter, as in the male subject. In consequence of the discharges from the rectum, I thought there might possibly be a communication between the uterus and rectum, but I could detect none. I accordingly concluded that the uterus did not exist, and that the development of the external organs and breasts, and the presence of venereal desires were produced by the ovaries alone. I stated to her and her husband my views of her situation, explaining the dangers, difficulties, and the uncertainty of an operation, and dissuaded her from having any thing done. In a few days her husband called upon me, and said that she was resolved upon an operation, be the consequences what they might. In compliance with her earnest desire, but contrary to my own judgment, I proceeded to operate, assisted by my kind and judicious friend, Dr. A. L. Williams, of Brookfield. I placed her upon the edge of a bed, with her feet upon two chairs, her knees supported by assistants. I then introduced a silver speculum of three-fourths of an inch diameter with some difficulty, (as the vagina was quite narrow,) then with the aid of a strong light I proceeded to make an incision with a scalpel, which I had previously prepared, by making a cutting edge upon the end. The substance was very dense and firm, and required considerable force to push the knife onward, which I did in a very cautious manner, until I had made an incision large enough to admit the point of the index finger; then with a finger in the incision and one in the rectum, I examined to see where I was. I then withdrew my finger from the rectum, and by moving the catheter in the bladder, found that as yet I was going correctly. In this way, by cutting, tearing, dilating, and examining, I proceeded on until I had penetrated about three inches into this substance, when the knife appeared to enter a cavity. I suspected at once that I had entered the cavity of the abdomen, but upon introducing a male silver catheter, straightened for the purpose, I found that it stopped abruptly after entering about six or seven inches from the external orifice. Considerable hæmorrhage followed, and she complained of severe pain in the bowels and loins. I introduced my finger, which passed readily up the whole length, but could detect no uterus. I introduced a gum elastic tube, the size of the ring-finger, six or seven inches, put her to bed, and gave a pill of opium and calomel. She wore this tube for six weeks, during which time it was taken out several times, and an endeavour to introduce a larger one made, but this was impossible. So great was the tendency to contraction, that if the tube was left out for two or three hours, it was very difficult to introduce it again. She suffered much from pain and inflammation in the bowels, having several attacks, which were relieved by venesection, calomel and opium. At the end of six weeks she discontinued the tube, and the incision soon closed, so that she is now in the same condition as before the operation.

[The preceding case is an exceedingly interesting one, and the careful manner in which the examination was conducted, as well as the condition of parts developed by the operation, seem to leave no room to doubt that the uterus was entirely deficient.

It may not be considered entirely out of place here to invite attention to operations performed to gratify the wishes of patients—or, as they are termed by the French, "*Opérations de complaisance.*"

It has been remarked, and we believe on good foundation, that such operations rarely terminate favourably; and although that performed by our correspondent be an exception to the rule, a sufficient number of cases might be cited from the records of our science to establish its truth. A few of these we shall briefly notice.

In January 1829, a man, 21 years of age, entered the *Hôtel Dieu de Paris* with a congenital deformity of his right leg, and urgently begged that the limb might be removed. The pain and risk which he would incur were fully represented to him, but as he still persisted in desiring the operation, Dupuytren amputated the leg. The patient was young, and his constitution good, nevertheless the result was fatal.

Sabatier amputated a leg in a similar case, and the termination was equally unfortunate.

Dupuytren has seen the most severe consequences from the amputation of a malformed toe; and death to result from the extirpation of a supernumerary finger.

Dr. Desgranges, of Lyons, reports a case of urinary calculus, in which he operated to satisfy the urgent desire of the patient, and death followed on the third day.

One of the most striking cases we remember to have met with on record, is that of a servant who entered the Hôtel Dieu de Paris, with an ulcer of his leg of many years duration, which he had long sought in vain to have permanently healed; and as it gave him much inconvenience, he solicited Pelletan to amputate the leg. This distinguished surgeon at first refused, but ultimately yielded to the urgent importunities of the patient, after fully representing to him the sufferings and risks he would incur. For a day or two every thing seemed to promise success, but serious symptoms then supervened, violent inflammation of some important organs took place, and the patient was soon conveyed to his tomb. Just before his death, he collected his strength, and, rising up in his bed, with an eloquence which could not have been expected from an uneducated man, he reproached Pelletan in the severest terms for having been so weak as to yield to his solicitations to be operated on. Having uttered this censure, he fell back and expired. Pelletan was deeply affected, and long remembered the painful scene.

It seems to be considered by most surgeons, that, when they have laid before their patient all the risks of an operation, if he still desires its performance, they are relieved from all responsibility as to the result. Even if this were the case, which we are not, however, prepared to admit it to be to the full extent, still the consciousness of having hastened the death of a fellow-creature, must be a most painful feeling to a sensitive mind. This consideration should be sufficient to deter surgeons from performing unnecessary operations, and lead them firmly to refuse to operate merely to gratify patients.]—EDITOR.

ARTICLE V. *On the Milk Sickness of the West.* By GEO. B. GRAFF, M. D., of Edgar county, Illinois.

OCCURRING, as the milk sickness universally does in our frontier settlements, where medicine as a science is in its infancy, and its practice too much in the hands of the ignorant, we have had very imperfect accounts of the affection, either as regards its history, symptoms, or means of cure.

A few imperfect essays recorded in our medical journals, constitute every thing that I have ever seen offered to the public on this subject. The earliest history of it that I have noticed, is mention made of a singular disease affecting cattle, by Bishop Hennipin, a French missionary, who ascended the western rivers early in the last century. He knew of it only as causing the death of cattle with singular and often very violent symptoms.

The only name by which it is known, is that which I have used, which is quite objectionable, as it may serve to convey an erroneous impression by the supposition that milk only could produce it; whereas, the flesh of an infected animal acts with an equal degree of violence and rapidity. It is greatly to be desired that we should have for it a name which would be more appropriate, drawn either from the localities in which the disease is found, or from some distinctive character of the affection.

It is a disease peculiar to the United States, occurring seldom, if ever, to the eastward of the Alleghany mountains. It is in a greater or less degree met with in all the western states, as far south as Mississippi, and extends north to the boundary. The states of Indiana and Illinois are most subject to its occurrence, whilst its existence in the bordering states is comparatively rare. As I have already stated, from the want of medical intelligence and enterprize in these sections, the knowledge which we possess of its early history has been obtained only as a portion of the history of those neighbourhoods in which it presented itself; and in those instances it would have passed into forgetfulness, but for the dreadful ravages it committed in the diminution of the numbers of the early settlers. In the first formation of our western settlements, its prevalence often served as a cause to disband a community, and compel the inhabitants to seek a location which enjoyed immunity from its occurrence. Many of the otherwise most desirable portions of that country remained long exempted from settlement, and even now the inhabitants of these localities have, as a condition of their residence, entirely to abstain from the use of milk, its preparations, and the flesh of their cattle.

Its occurrence or prevalence is confined to no season, or description of weather, existing in a like degree in the heat of summer or cold of winter, and with like virulence and frequency during a dry or wet season. An opinion is entertained by some, that it is more frequently met with in the spring and fall months, whilst others have expressed a belief of its more common occurrence during the heat of summer. However this may be, we know of no season during which it does not occur.

The animals in which it has been observed are the beef cattle, horses, sheep, and goats, which seem to acquire it with their food or drink.

We will first speak of the *symptoms* manifested in cattle affected with it, as it is only through them that we have yet found the disease communicated to man. They may be affected to such a degree as that their flesh and milk will produce the disease, and yet they themselves manifest no unhealthy symptoms whatever. This latent condition of the disease may be discovered by subjecting the suspected animal to a violent degree of exercise, when, according to the intensity of the existing cause, it will be seized with tremors, spasms, convulsions, or even death. This is a precaution practised by butchers in these countries, always before slaughtering an animal in anywise suspected of the poisonous contamination. An ordinary degree of exertion will not develope these phenomena unless it produce the symptoms usually preceding a fatal termination. When for instance a cow is sufficiently deeply affected, nothing peculiar is observed until immediately preceding the outbreak of the fatal symptoms. She is then observed to walk about, without any apparent object in view; all food is refused, and there is evidence of impaired vision. The eye is first of a fiery appearance, increasing to a deepened red colour, until the animal is observed to stagger and fall, when, if she rise, the trembling of the whole muscular system will prevent the maintenance of the standing position. The animal usually dies after repeated convulsions, never lingering beyond a few hours. Often it falls suddenly, as if it received a blow from a heavy body on the head, and death is produced in a few minutes.

From the tremulous motion imparted to the muscles, the affection has received the common name of the "Trembles" in cattle. A case which was characterized by the great violence of its symptoms, I had an opportunity to examine very shortly after death. The brain I found suffused with a large quantity of fluid blood, which, from the amount contained within the cranium, must have made great pressure on every part. Unacquainted as I was with the healthy appearances of the other tissues, I could not speak of any changes existing in their appearance or structure.

In man the symptoms differ from these, and are varied. The length of time found to elapse from the reception of the cause to the appearance of the disease, is dependent on a multiplicity of circumstances, as the age, sex, or condition of the patient, and violence of the poison. It may be developed early as the third, or deferred until the tenth day. As a premonitory symptom, a peculiar and indescribable fœtor from the lungs is the most prominent, and so universally have I found it present and to precede the disease, that in almost every instance where I have been brought in proximity to a person predisposed or attacked, have I been able to foretell its approach, and pronounce on the character of the disease. This fœtor can no more be mistaken by a person accustomed to it, than that which is so universally attendant on variola; and it may in fact be safely stated to be pathognomonic of the forming and early stage of milk sickness. This halitus from the lungs, which I have never found entirely wanting even some days previous to an attack, increases in intensity until the disease is fully developed, when it gradually disappears with the specific symptoms, and at the termination of four or five days cannot be detected. A person labouring under the peculiar effluvia from the air passages, in many cases complains of no illness, and appears entirely unconscious of his situation, unless advised of it by his friends or attendants. His appetite may be, and usually is, destroyed; and after the lapse of a few days he is taken down with pain and excessive irritability of the stomach, obstinate constipation of the bowels, a cessation of all biliary secretion, general febrile action, sometimes an intense burning sensation in the epigastric region, with early and obstinate coldness of the extremities. Often the symptoms are observed to differ widely from these. Besides the peculiar smell emitted, there is a premonition of the attack; for some days previous to its development, the patient experiences a restlessness and uneasiness which he cannot describe; there is a frequent moving about without any definite object in view, and he finds it impossible to confine his attention to any subject or employment. He feels, and often expresses a dread of some impending calamity; starts at the slightest noises; his temper is always irritable; his lip is seen to quiver when he attempts to speak, and all his motions are characterized by a nervousness, and are quickly performed. This state of things gradually increases in severity; his ideas are much confused; he suffers greatly from a want of words to express his meaning, with every evidence of a deep and somewhat peculiar state of cerebral irritation. Added to these there is a severe pain in the head, attended with tinnitus aurium, suffusion of the eyes, and intolerance of light. Vomiting announces the onset of an attack, and consists at first only of the contents of the stomach, which are violently ejected. Some bile may or may not be discharged, it is for the most part absent, and in some instances I have seen large quantities of dark coloured and viscid bilious matter thrown up; but it continued for only a short time, when it ceased, and all evidences of its secretion are absent until it be restored by the action of remedies. Vomiting at short intervals continues for many days, consisting of the fluids swallowed, mixed with a glairy mucus, and not unfrequently tinged with blood. Some days frequently elapse before pain in the stomach is complained of, but during the time the suffering is intolerable, consisting of a sensation of deep distress, which, though referred to the præcordia, or abdomen, the sufferer cannot locate in any particular spot. Pain in the limbs is complained of, and is severally referred to each of the extremities, but is more constantly located in the spine, particularly at the nape of the neck. The pulse during the forming stage, possesses greater force and volume, with slightly increased action. Upon the commencement of vomiting, it becomes greatly accelerated, is quick and frequent, and varies in different cases with the degree of inflammatory action existing, and the means of treatment employed. The bowels will remain obstinately constipated, the powers of nature being incompetent to relieve the condition, so that unless it be done by appropriate remedies, at the end of six or eight days an offensive discharge takes place, quickly followed by dissolution, the symptoms being those which would indicate disorganization of the structure of the intestines. The tongue, during the initiatory stage, is slightly furred, but otherwise not much changed in appearance. This coat disappears soon after the occurrence of vomiting, and becomes clean, of a pale red or pink colour, greatly resembling a piece of raw veal. Next to the fœtor mentioned, the change of volume occurring in the tongue may be viewed as the great characteristic of this disease. It rapidly attains an inordinate size, completely filling the mouth, and so flabby and soft in its texture as to retain perfectly the impressions left by the teeth, when extruded. Often a number of efforts are necessary before it can be forced out, and then it has a tremulous motion. This condition of the tongue changes with the stage of the disease. When the vomiting has been suspended, and free evacuations from the bowels obtained, it is reduced in volume, the surface is for a time smooth and glazed, soon after becomes dark, cracks open in transverse fissures, is hardened with an obstinately dry and rough surface. Of all the primary symptoms, vomiting is the last to disappear; it ceases very gradually to annoy the patient, and its continued absence is the most certain indication of a state of convalescence. In no disease is there a greater difference or diversity of symptoms than are usually found in different cases to constitute what may be properly termed the secondary stage of milk sickness.

The economy at large seems to suffer in proportion to the intensity of the vascular and cerebral excitement, with the local direction impressed on them, as well as from the remedial means found necessary to be employed during the course of treatment. Simultaneous with the disappearance of the peculiar odour emitted from the lungs, the disease loses all its specific characters, and the system seems to labour to recover from the injury inflicted upon it. Often the symptoms are those evincing only extreme debility of the powers of animal life, with general functional disturbance. In other cases the patient is affected with drowsiness, low muttering delirium, nervous tremors, and that whole train of cerebral disturbances which indicate a low typhoid condition of fever. This latter condition occasionally follows all modes of treatment, but is particularly liable to present itself when a due degree of depletion has been neglected, or the efforts to evacuate the bowels have not been sufficiently vigorous, and will most readily happen during the winter, and early in the spring. In this stage the skin is hot and dry, or cool and moistened, with a clammy and particularly offensive secretion. The coldness of the extremities will be found to remain until the condition of, and disposition to, congestion is entirely broken up. The degree of sensibility of the bowels on pressure is extremely variable; sometimes an application of it in a moderate degree being attended with pain, and at others none at all. The volume of the bowels is increased, and they have externally a soft doughy feel, and one of the most common appearances is a regular pulsation of the entire abdomen, seeming to be greatest at a point to the right of the umbilicus.

Frequent fits of extreme restlessness occur which cause much suffering, the distress increasing until entirely relieved by the vomiting up a few ounces of a dark coloured fluid, much resembling coffee grounds; after which the patient soon relapses into his former state of stupor or insensibility to all surrounding objects. When this latter symptom has been present, I have never witnessed a case of recovery. It seems to occur in those instances in which the liver was primarily deeply engorged, and I have not observed it when the biliary secretion had been completely established. According as the establishment of the secretion has been early or retarded, are the chances of recovery, and mildness of secondary symptoms in a direct proportion. When recovery does ensue from severe cases of this affection, it is tedious, and years are often required to restore the patient to his wonted health and vigour. Indeed it has been a question with many, whether those once severely attacked ever regain a perfect integrity of constitution. In cases which terminate fatally (of which description is a large majority) a length of time of from one to four weeks is required, proportionate to the intensity of the primary effects, the propriety of the treatment, and the natural powers of the resistance of the constitution, as they often seem to die from a wearing out, or gradual destruction of cerubral and nervous energy. Those cases which occur during the summer months, are most decidedly inflammatory, whilst in the winter there is always observed a disposition to assume a low form. The autumnal cases, in their secondary fever, are liable to assume a remittent aspect, and I have seen them eventuate in a well marked intermittent. When recovery has taken place, the patient retains not the slightest recollection of any thing which occurred during the progress of the disease, and this forgetfulness often extends as far back as some days previous to the active development of the disease. In a single instance, and the only one of which I have ever heard, I witnessed incurable insanity to follow an attack of milk sickness, although the case was throughout attended with unusually mild symptoms.

The first evacuations obtained are watery, small in quantity, and almost without smell. When bile begins to be discharged, their colour changes from a light appearance to a green or darker one; they become consistent, and extremely and insufferably offensive. The quantity of the secretion of urine is throughout diminished, and at times almost suspended. At first it is observed to be high coloured, and deposits a very copious precipitate of acicular pink crystals, whilst in the more advanced periods of the disease it is colourless, and on standing very soon precipitates a quantity of mucus, without a change of colour. Nothing can be more widely different than the appearances of the blood drawn at different stages of the disorder. Taken at the onset of the attack, it is found dark, thick, and rapidly coagulates, presenting the buffed coat, well marked; the coagulum likewise contracts, and is deeply cupped. The quantity of serum is proportionately small, is invariably of a bright yellow, or even orange colour. This character is maintained, though in a degree less marked, for two or three days, when it greatly changes. The serum is found to predominate, is of a red colour from the red globules, which do not separate from it; the coagulum is quite small; long in separating; may be easily broken up, and presents a brown, gelatinous appearance.

Cause.—The cause of this disease in animals is as yet shrouded in mystery and uncertainty. No satisfactory account of its nature has ever yet been given, and it has in turn been supposed to be of vegetable, mineral, and even aerial origin. The limits of its prevalence is not often over a large continuous tract of country, but rather circumscribed, and surrounded by localities never known to produce it. No example is known in which the property of producing the disease has been acquired by any locality which did not previously possess it. The boundaries which were at the first discovery of the country found to separate the infected from healthy districts, remain unchanged. The locality which serves to produce the disease, most commonly extends as a vein of variable breadth, traversing the country for a considerable distance. It can be traced in one instance for nearly a hundred miles, running parallel to the course of the Wabash river, in the state of Indiana.

Again—it will be found to occupy an isolated spot, comprised in an area of one hundred acres, whilst, for a considerable distance around, it is not produced. Thus having the locality perfectly circumscribed, much labour has been expended in order to discover some production peculiar to the locality. The search has been uniformly unsuccessful in the attainment of its object. The general appearance of these infected districts is somewhat peculiar. I have always observed that the situation of the ground is elevated above that of the surrounding country, occupying what is denominated a ridge, and that the quality of the soil is in general of an inferior description. The growth of timber is not observed to be so luxuriant as in situations otherwise similar, but is scrubby, and stunted in its perfect development, in many instances simulating what in the west is denominated "Barrens." Throughout the entire district in which these localities are interspersed, there is observed an absence of the occurrence of stones scattered over the surface, whilst in the infected tracts they are almost universally present. They are of a small size and darkened aspect externally, breaking with a regular and shining fracture, and, upon analysis, imperfectly made, were found to contain a considerable portion of iron, with slight traces of copper. Another more decided and peculiar appearance which serves to distinguish them from other spots, is the breaking forth of numerous feeble springs, furnishing but a trifling supply of water, but not varying in quantity with the change of seasons. In its appearance, it presents the general evidences of a sulphurous and ferruginous contamination.

Experiments made upon the water collected from these springs, or more properly called oozes from the soil, with the greatest care by the employment of the most delicate chemical re-agents, failed to indicate the presence of any mineral except iron, sulphur, traces of magnesia, and a quantity of copper barely capable of being demonstrated. A belief being entertained by many that the disease is occasioned by arsenic, or some of its salts, I with much care and patience subjected not only the water, but likewise the earth, from these districts to a most rigid examination, and by no test was I furnished with the slightest evidence of its presence.

An intelligent medical friend expressed to me his belief that it was produced by the inhalation of some noxious gases generated during the night; in proof, he stated that he had observed cattle, which were regularly housed each evening, escaped its attacks, and that when suffered to remain at large, they were frequently seized with the disease. It is difficult to form this belief of the nature of the cause, as we can hardly conceive the particular action of any combination of circumstances, capable of giving rise to such an emanation only at night, ceasing to act during the day. The most popular belief is in favour of a vegetable origin. The advocates of this method of production having failed to designate the plant which they supposed occasions it, have endeavoured to sustain their views by supposing that the poison exists in some shrub or tree, which is eaten by the cattle, but confess their inability to designate any such peculiar growth confined to these localities. If certain fields which are known to affect cattle fed upon them, be suffered to grow in grass, and the hay produced be given to them for their continual food, no disease results, which is a strong circumstance, unless it be urged that the active poisonous principle is destroyed by the desiccation. Again, it has frequently appeared with its greatest virulence when the ground has been for weeks previously covered with snow.

For my own part, I would most willingly subscribe to the opinion that some mineral, or mineral combination possesses the agency of its production. Yet I confess that I cannot even imagine what must be the nature of that substance producing such violent and anomalous effects, and in its operation so unlike any thing with which we are acquainted. The cause, whatever it may be, when it enters the organization of the animal, either by inducing a specific action in the tissues of the economy, or by a combination with some of the elements of the body, forms a poison not more violent in its operation than singular in the effects it can produce. If this cause should prove to be a mineral, it must be one of great subtlety from its difficulty of detection, and from its virulence it must possess qualities and activity not equalled or resembled by any metal or metallic combination yet discovered. No substance, of which we possess any knowledge, will produce like phenomena. Hoping, that if I could succeed in developing the same symptoms and effects by some active or poisonous article, it might, by the probable analogy of the agents, lead to the discovery of the nature of this poison, I patiently tried many. The action of none of the mineral poisons were found at all similar. My experiments were chiefly made on dogs, and in them I found the symptoms, immediately preceding their death, occasioned by a fatal dose of strychnia, greatly to resemble those produced by the continued administration of the flesh of an animal which had perished from milk sickness. The appearances on dissection differ in a greater degree, and particularly in that cases of poisoning by the vegetable proximate principle exhibit the blood in a state more nearly resembling a healthy condition. With the view to an extensive series of experiments, I procured the body of a full grown cow, which had perished suddenly from the affection, with violent symptoms. The brain was immersed in a copious effusion of blood, and in no portion of the body was it found coagulated. The flesh in external appearances did not differ from that of healthy beef, unless that it was slightly darker, and a thin bloody fluid continually dropped from it. By exposing it by the side of a healthy portion, I found that the influence of the sun rendered the specimen from the diseased animal offensive, and turned it to a greenish hue, whilst the other remained comparatively sound and unaffected. It can possess nothing peculiar in its taste, for persons who have partaken of it have not remarked any thing unusual, and animals will exercise no preference, if the two descriptions be simultaneously presented to them. The beef which I procured was subjected to the ordinary process of salting, which did not in the least affect its poisonous properties.

Butter and cheese, manufactured from the milk drawn from an infected cow, are supposed to be the most concentrated forms of this poison. They possess no distinguishing appearance, odour, or taste, from the healthy article. A very minute quantity of either will suffice to develope the disease in man. The cream, ordinarily sufficient to be added to the coffee drunk at a single meal, is said to have induced an attack. The butter or cheese eaten at one repast, has frequently been known to prove effective. The property is not contained in any of the elements of the milk exclusively, but distributed throughout the whole of them, being possessed by the buttermilk as well as by the whey. Beef, in the quantity of a very few ounces, will produce the disease, and it is generally believed in a more violent and fatal form than when it is produced by milk, or any of its preparations.

In the course of my observations I had an opportunity to experiment with a cow suffering in but a slight degree from the cause. She was affected with tremors when unusually exercised, exhibited a red and suffused eye, with frequent twitches of portions of the muscular system. She was kept confined without an opportunity to exercise, and was fed upon ordinary food. At the end of eight days, the milk drawn from her possessed as violent poisonous properties as at the time of her incarceration. Her confinement was continued for a week longer, at the end of which period, the milk taken from her was found in an entirely healthy condition, and the eyes were restored to their natural appearance. In this instance it will be seen that the property of imparting the poison to the milk was lost in the space between eight and fifteen days. We, of course, cannot fix on the precise period, but we would infer that the property is suddenly destroyed rather than gradually dissipated.

My trials with the poisoned flesh were, for the most part, made upon dogs, which I confined, and often watched the effect of the poison when administered at regular intervals. In the space of forty-eight hours from the commencement of the administration of either the butter, cheese or flesh from poisoned animals, I have observed unequivocal appearances of their peculiar action. In a few hours, a thirst greater than natural is created, the appetite remains unimpaired until the expiration of the fourth or fifth day, or just before the appearance of fatal symptoms, the animal will refuse drinks and the most inviting descriptions of food.

Vomiting does not, as in man, always precede death, but the bowels are constipated throughout, except that, in a single instance, I observed copious alvine discharges largely mixed with blood. One ounce of butter or cheese, or four ounces of beef, either raw or boiled, administered three times a-day, will certainly prove fatal within six days, and often earlier. In these cases all exertions and exercise must be prevented, or death will occur much sooner, even as early as the third day. When an animal has been subjected to its influence for only a short time, and is induced to fatigue itself, or is driven a distance at full speed, he suddenly stops and falls, and the severity and duration of the convulsion or spasm is in proportion to the intensity of the action of the poison. Often he will appear to entirely recover from the first attack, but to be repeated upon the renewal of the exercise to a sufficient degree. With a dog in this situation, I endeavoured to keep him under a moderate degree of its influence, giving the flesh in very small quantities. Soon his stomach became so irritable that it rejected all solid food swallowed, but retained water, which he drunk in large quantities. In this state he lingered along, rapidly emaciating, taking no exercise unless compelled to move; he slept nearly the whole time, seemed lethargic, and lost entirely the remembrance of his former master. He died without a convulsion, and I instituted an examination of the post-mortem appearances, which may be found in the relation of Case II. Of the symptoms produced, I have observed a great diversity, but their difference can be accounted for by the amount of the poison administered, and, perhaps, the different degrees of susceptibility of the various animals experimented upon. One of the animals, which I proposed to destroy with large doses frequently repeated, escaped from confinement during the second day, and I saw him enjoying apparently excellent health some weeks afterwards. The effect of the poison must be manifested throughout the entire system, and vitiate all the secretions. An experiment, which went far to prove how deeply the milk of other animals is imbued with its poison, was made by administering the infected meat to a bitch suckling five puppies. The effect produced in them was very sudden, and the entire litter died in four days, which was two days before the occurrence of the death of the mother. I am inclined to believe that the poisonous principle exists in a more powerful degree in the muscular fibre, than in either the cellular or adipose tissue. I could observe great difference in the violence of the effects, when the same quantities by weight of either of these was administered.

The urine secreted by man during the first or inflammatory stage is highly charged with the poison. It is secreted in such a diminished quantity that it could not be sufficiently tested; but, by evaporating the small quantity obtained to the consistence of honey, I have succeeded in producing well marked symptoms, though in a slight degree.

That the flesh of a man dying with this disease should, if eaten, communicate it, we can believe, as that of the dogs destroyed possessed it in as high a degree as the beef which first communicated it. In order to discover, if possible, whether the active principle may not prove to be some matter, the constitution of which might be determined by subjecting the poisonous flesh to chemical agents, numerous experiments were instituted, having this object in view. In one instance a quantity of the flesh was cut into small pieces, and subjected to the action of dilute sulphuric acid for two hours. It was then thoroughly washed with repeated quantities of cold water, and given to a dog; it seemed to have parted with none of its active properties. The same experiment was made with the other mineral acids, likewise with the tartaric, and with the like results. In succession, I treated the muscular tissues (as being the portion most actively poisonous) with the chlorides of lime and soda, the alkalies and tepid water, without apparently modifying the effect of the poisonous principle in the animal system. Heat when conjoined did not affect the result. I found one agent, and one only, which seemed to exercise the least perceptible action upon it. When the flesh was boiled for a length of time in a decoction of Aleppo galls, and afterwards carefully washed with water, I found it to be rendered comparatively innoxious; but even then a large quantity of it administered would produce slight manifestations of the peculiar effects of the prison. With this experiment to guide me in its treatment, I administered tannin repeatedly, and in large doses at the onset of the disease, but with such a result as convinced me of its doubtful efficacy.

Butter of a poisonous quality, subjected to such a degree of heat as to cause it to inflame, loses none of its virulent properties. With a view to ascertain if the poisonous principle was soluble or could be communicated to water, I boiled a large quantity of the beef in pure water for several hours, and afterwards evaporated the liquid thus obtained to the consistence of cream. Although this extract contained a large quantity of gelatinous matter, with some of the other constituents of the flesh, yet, on being given in large quantities, no perceptible effect was produced. From this we can draw the practical inference that this disease will not be communicated to man, even should he partake of soup made from an infected portion of beef. As far as my researches have extended, I have been unable to produce the disease by an inoculation with any portion of the body or secretions from infected animals. If we reason from analogy, we might incline to the opinion that some product of the diseased action would possess the power to reproduce it, and suppose it to exist in a concentrated form, as we have in the saliva of hydrophobia or the matter of variola.

That a matter possessing like activity may exist in some part not yet demonstrated, we can readily suppose, but we must wait for patient investigation to determine the truth or fallacy of the supposition. This subtle poisonous principle, of whatever it may be proved to consist, seems to possess the power of infinite reproduction, by some vital or chemico-vital action of the system of those animals poisoned by its influence. Thus, suppose one pound of flesh to prove sufficient to produce the death of another animal, it will be found that each pound of flesh of that animal so destroyed, will possess as active powers of destruction, and will, in its turn, serve to contaminate the whole body of another animal in the same degree. I had wished to repeat this so often as to demonstrate the possibility of its reproduction *ad infinitum*. In this I failed, from the difficulty experienced in compelling "dog to eat dog." From what I have observed, I would say that there exists a power of generation of the poisonous principle in the animal economy. This primary impulse being received from the specific action of some substance, vegetable or mineral, by some means obtained from the soil.

There is, however, one animal, which, from some peculiarity of organization is rendered proof against the pernicious effects of this otherwise powerful agent. I allude to the hog. Most industriously did I feed a troublesome sow running at large, administering daily five or six pounds of infected beef. This was persevered in for more than a fortnight, and under the *treatment* she fattened, when I was compelled to desist from the great quantity necessary to supply her voracious appetite, without enjoying the satisfaction to perceive one muscular twitch as an evidence that it produced the slightest effect. When I last saw her, she enjoyed excellent apparent health, and was the mother of a numerous offspring.

Of the appearances presented on *autopsic* examination, I shall first speak as they were found in animals. For the sake of brevity, I shall notice only two cases, selected from a number made and recorded. The first is that of a young and healthy dog, which was fed on large quantities of poisoned meat regularly for three days, during which time he was kept perfectly quiet. At the end of this period he was taken out, and run violently a few hundred yards, when he was suddenly seized with a severe convulsion, and died in a few minutes, not having recovered sufficiently to be able again to rise to his feet. The examination was made one hour after.

The external appearance of the stomach and viscera of the abdomen was healthy, except that the intestines were much diminished in their calibre, and the former organ was reduced at least to two-thirds of its natural size. The mucous lining was of very pale red, or pink blush, and the appearance extended over every part. Blood in a considerable quantity was found upon the surface, and within the ventricles of the brain. The veins were distended with a dark liquid blood, and in no part was it found coagulated. The arachnoid membrane, when washed from the blood effused around it, was found to be very minutely injected, and in places rendered slightly opaque. No examination of the spinal cord was made. This will serve to give a general idea of the appearances in acute fatal cases. Of a number examined, no one differed essentially from what we have described. When the medulla spinalis has been exposed, it gave evidences of recent irritation, and there was likewise a general phlogosed appearance of the liver, lungs, spleen, and kidneys.

The next examination to which I shall allude, is that of the case spoken of in page 360, having been one of long continuance. This examination was made three hours after death, when the abdomen being opened, was found to contain a quantity of bloody serum, and adhesions of a slight nature had been formed between the surfaces of the peritoneum. The appearance of the membranes indicated different degrees of inflammation in different portions, and in some spots it had assumed a dark and gangrenous aspect. The liver was of an extremely dark colour, distended with blood, and its texture was much softened. The spleen was more than double of its natural size, and its substance was easily broken up. The stomach was contracted to the size of an orange, with no portion of the lining membrane in a sound condition, being softened, and for the most part disorganized, but in no place perforated. This altered appearance of the mucous membrane became gradually less marked, as the examination proceeded downwards, and the lining membrane of the large intestines was nearly natural in appearance. Upon exposing the brain by removing the dura mater, there was found beneath it a layer of coagulable lymph and purulent matter covering its entire surface. In some portions the tunica arachnoides was found opaque, and so much thickened as to have changed its physical character. Within the ventricles, patches of coagulated lymph were effused. The substance of the brain, particularly that of the anterior and middle lobes, was found much softer than in health. The cerebellum seemed to have been a principal seat of the inflammatory action, although it retained entirely a healthy consistence. The medulla spinalis was exposed completely, and examined with care. Its membranes bore all the evidences of recent inflammation, and the substance of the cord was found minutely injected. Throughout the whole body the blood remained fluid, and at no place was the smallest coagulum to be discovered.

From all the experiments I have made and the reasoning used, I can arrive at no conclusion, so far as relates to the nature of the ultimate cause in man, to whom it can only be communicated through the medium of an animal, and that capability of production can be acquired only by the animals of circumscribed localities. An intelligent medical friend, alike distinguished as a statesman, Dr. John W. Davis, of Indiana, in a late letter to me, expresses a belief that milk is never a cause of the disease. He merely states his belief of the fact, without the evidences or observations which have led him to the denial of a proposition heretofore viewed as settled beyond dispute. My own experience enables me to say that I have seen a peculiar affection, which I feel assured could have been no other than the milk sickness in a city remote from any of its local causes, attacking every individual who partook of a certain cheese which had been purchased from a wagon arriving from an infected district. In this instance the well marked symptoms, confined to those only who partook of this cheese, appearing nearly at the same time with no occurrence of new cases after the removal of this cause, all together afford strong evidence of the nature of the origin.

The instances just cited, occurred in Chillicothe, Ohio, in which place I met with a medical friend who had charge of a number of the cases. He expressed to me his belief that the disease was milk sickness, from what he had learned in relation to it, in addition to the fact that it was confined exclusively to a single house, sparing those inmates who did not eat of the cheese in question. At his request I accompanied him to see two of them, and, from every appearance and symptom manifested, I could not for a moment hesitate to form an opinion as to the real character of the disease. Fortunately the attacks were of unusual mildness, and but two cases out of thirteen proved fatal.

There is a murderous practice now carried on in certain districts, in which the inhabitants will not themselves consume the butter and cheese manufactured; but with little solicitude for the lives or health of others, they send it in large quantities, to be sold in the cities of the west, particularly Louisville, Ky., and St. Louis, Missouri. Of the truth of this I am well apprized by actual observation, and I am as certain that it has often caused death in those cities, when the medical attendants viewed it as some anomalous form of disease, not suspecting the means by which poison had been conveyed among them. Physicians of the latter city, having been questioned particularly on this subject, have mentioned to me a singular and often fatal disease which appeared in certain families, the cases occurring simultaneously, and all traces of it disappearing suddenly, and which I cannot doubt were the result of poisoned butter or cheese. This recklessness of human life it should be our endeavour to prevent, and the heartless wretches who practice it should be brought to suffer a punishment commensurate with the enormity of their crime. From the wide extent of the country in which it is carried on, we will readily perceive the difficulties to be encountered in the effort to put a stop to the practice. This being the case, our next proper aim should be to investigate the nature of the cause, and establish a more proper plan of treatment by which it may be robbed of its terrors, and the present large proportionate mortality diminished.

Pathology.—Of the essential nature of the cause, its operation, and mode of treatment, each professional man has his own peculiar notions and belief. One who has had much experience in the disease, will recommend a remedy as proving in his hands eminently successful, which another equally experienced would assure us he found entirely to fail, or greatly aggravate the symptoms. Indeed so much discrepancy is found to exist between the relations of different practitioners, that we can hardly believe the affection in their respective localities to be identical, were it not for the one continual concomitance of that peculiar odour from the lungs already dwelt upon, and which all recognize in the genuine affection. We may reconcile these discrepancies by the supposition that the differences can be accounted for in the variations of the intensity of the cause, and the modifications impressed upon it by locality, season, and climate.

Hundreds of persons throughout the west and southwest are annually perishing from its attacks. Owing to the want of success which has so uniformly attended the practice of their physicians, many of the inhabitants depend entirely on their domestic remedies. It is in that country emphatically one of the *opprobria medicorum.*

The primary operation of the poison seems to me to be on the brain and nervous system, and this is indicated by the cerebral irritation which so often precedes, and always accompanies, an attack, as well as by autopsic appearances. Without an exception, in the animals poisoned, I always found the brain and meninges phlogosed with a greater or less degree of inflammatory action.

A case which occurred in my own practice, I think, fully sustains the position taken, and settles the matter, that the first impingement is made upon the general nervous system. The circumstances of the case were as follows:—The entire family of a Mr. Frazier, moving westward, purchased a quantity of fresh beef in Indiana, of which every member of the company partook heartily daily until it was exhausted, which was the day on which they arrived in my neighbourhood, being the evening of the fourth day. In the evening they retired, apparently in their usual health; but, during the night, I was summoned to attend a female of the company who was advanced about six months in pregnancy. She was violently seized with pains of labour, and was prematurely delivered of a healthy looking fœtus at the moment of my arrival, which was in less than an hour from the commencemen of her pains. The abortion was characterized only by the violence of her throes and consequent severe suffering. No cause whatever could be assigned for its occurrence, her appetite had been good and health as usual, except a slight occasional palpitation of the heart, which she attributed to the fact that her bowels had remained constipated for two or three days previous. Not deeming my presence necessary, I returned home only to be summoned again before morning, when I found unequivocal symptoms of milk sickness had presented themselves. The peculiar odour was quite perceptible, and, probably from the fact that I did not suspect the existence of the disease at my first visit, I failed to detect it. Upon a careful examination, I discovered the smell present with every member of the family, and, on inquiry, ascertained about the beef and the locality in which they purchased it, which at once satisfied me they were doomed. Before the next morning every member of that company of six was attacked in a violent manner, and only one of the number recovered.

The woman first attacked was the first victim, her death having been hastened by the supervention of a dark-coloured hæmorrhage from the uterus on the day of her death, which was the fourth of the attack. In this case I obtained an opportunity to institute a post-mortem examination. The viscera of the abdomen all bore traces of irritation and a slight degree of inflammation. The mucous membranes of the alimentary track were reddened in places, and the size of the stomach and the calibre of the intestines were somewhat diminished. The uterus had not perfectly contracted, and its walls wanted their usual degree of firmness; its lining membrane was darkened, and the surface was covered with a muco-gelatinous exudation of a light brown colour. Effused into the cavity of the peritoneum were a few ounces of reddened serum, and the membrane was discoloured, especially at the portions reflected over the fundus of the uterus. These appearances would not account for so sudden a death, and, on examination, the principal lesions were discovered in the brain. Occuping the ventricles, serum suspending flakes of coagulated lymph were found in a considerable quantity. The dura mater adhered to the membranes beneath it, and was detached with some degree of difficulty. The pia mater had so plenteously effused lymph upon its surface that it could not be separated from the arachnoid, which latter membrane in some places had lost its distinctive appearances. The substance of the brain itself was decidedly softened, and, upon examining a section of the cineritious portion, small and innumerable vessels deeply injected with red blood could be distinguished with the naked eye. The appearance of the liver was somewhat peculiar; it was deeply engorged, although depletion had been practised to its fullest extent; it was of a darker colour than natural, and the gall-bladder was distended with a large quantity of viscid bile. In connection with this latter appearance it is proper to observe, that none of this secretion was vomited at the onset of the disease, nor had the remedies the effect to restore a secretion of it.

This account must necessarily be imperfect from the fact, that the examination was made under disadvantageous circumstances, by stealth at night in the open air, and by the light of a single candle, and one assistant present.

I removed the brain for future inspection and exhibition, but the fact having been ascertained, the inhabitants insisted on a return of it, probably for the use of the deceased, and evinced their holy horrors of the practice of making post-mortem examinations, by carefully guarding the repositories of the others who died of this disease until long after decomposition had rendered an exhumation unprofitable.

Never having seen an account given of any autopsic appearances in fatal cases of this disease, it would have proved to me a source of peculiar gratification had I been permitted to have instituted examinations in the cases of the other members of this family who died. I feel an anxiety to know if these evidences of violent cerebral inflammation were the legitimate production of the disease, unconnected with the puerperal condition of this patient. I have never yet witnessed a case of this disease in which the brain and nervous system were not deeply, and often primarily affected, which condition alone enables me to account for the abortion in this case.

Treatment.—General bleeding is the first, and, according to my experience of all others, the most important remediate means. The extent to which it should properly be carried, can be regulated only by the pulse, and, so long as *it* will bear it, we should have no hesitation to continue the abstraction, being guided neither by the weight nor measure of the amount drawn. To insure its advantageous operation it must be practised early, as, after the lapse of a few days, it cannot be carried to any extent from the sinking induced. If it can be avoided, we should never at one time push it so far as to produce syncope, for reaction is always slow, often imperfect, and we have seen congestion occasionally result from a want of attention to this direction.

The pulse I have ever found to be the surest guide, but occasionally it will, in the very commencement, be found small, frequent and oppressed, and but slightly tense from the beginning. In such cases it is proper to open a vein, and, if the pulse rise whilst the blood flows, it should be continued.

Next in importance to general bloodletting, I would rank local abstractions by cups, applied over the epigastrium and region of the liver, but more particularly are they of service to the temples and back of the neck. In some recent cases terminating favourably, I have attributed the recovery mainly to the adoption of the latter means.

We should direct the head to be shaved in the beginning, cold applications being made and continued for some days. This, conjoined with the liberal abstraction of blood generally and locally from the head with cups, will be found the most certain means of allaying the excessive irritability of the stomach. Blisters may be applied early, and are found particularly serviceable over the liver, in which case they seem to have the effect to relieve the congestion of the organ, and hasten the resumption of the exercise of the suspended function. In the latter stages they are of much advantage applied to the top of the sternum, back of the neck or to the scalp itself, and their good effects are increased by dressing them with some irritating cerate, in order to maintain a discharge. In certain low forms of the secondary fever, they will assist the oppressed powers of life, when applied to the extremities, being careful to keep up a continued impression by their repetition.

Opium and its preparations, given with a view to relieve vomiting, instead of effecting the desired object, have a direct tendency to increase it, and at the same time greatly to aggravate the febrile and cerebral symptoms.

No remedy administered internally has ever yet been found to allay either the irritability of the stomach or that intense sense of suffering which accompanies it.

By some the object is said to have been attained by the administration of repeated doses of tartarized antimony in the quantity recommended to maintain a state of nausea without vomiting. I view the propriety of its administration as questionable, and if it be really true that it does relieve the vomiting, we would account for it by tracing the effect to its indirect action on the brain. No agent will, according to my observation and experience, prove of service to allay this condition of the stomach, unless its operation be directed towards the brain; and, hence, the next important indication to bloodletting, is the application of the remedies already spoken of to that organ. The coldness of the extremities is a troublesome symptom, and can be relieved temporarily by the application of dry frictions and stimulating liniments. The extremities will not regain a natural and equable temperature until the proper biliary secretion is fully established.

The irritability of the stomach being quelled so far as that it will retain medicines, we must push their use with all possible industry to relieve the existing obstinate constipation and likewise restore the suspended action of the liver. For this purpose resort is commonly made to calomel in large and repeated doses, and, at the same time, conjoin with it other purgatives of the most active class. I would condemn the freedom and frequency with which this mercurial has been administered, and suggest a reduction of the quantity to that not exceeding five grains every two or three hours, and entirely discard the use of irritating or drastic cathartics. A remedy that, in domestic use, has acquired a high reputation in the treatment of milk sickness is olive oil. I have found it to be more readily retained in the stomach than other cathartics, and, though not very speedy, is certain in its operation. Conjoined with, or preceded by, the administration of a small dose of calomel, I have in many instances found no other medicines of the class necessary.

Soon after the commencement of the use of cathartics, we should have recourse to stimulating enemata every few hours, as they frequently exert a powerful influence in hastening their operation. Even when we have succeeded in opening the bowels and establishing the flow of bile, the cure of the case is but half accomplished, and much danger yet exists of a fatal termination. The secondary fever will always follow, with a different degree of obstinacy, varying as much in duration as in the different types it assumes. Of course the treatment of this must be varied according to the symptoms which arise. Not even general directions can be given; there is now no specific action, and the intelligent practitioner will treat the symptoms as they present themselves.

I have now brought to a close a hasty and imperfect sketch of a disease which must be viewed almost as an anomaly in medical science. Our knowledge of it is unfortunately so limited, that we know not where to class it. It deserves, and should receive, the attention of some one competent to the task of unveiling its mysteries and pointing out the means by which it may be disarmed of its malignity; and the author will feel fully repaid for his labour if it will, in the slightest degree, prove the means of directing more general attention to this hitherto much neglected disease.

ART. VI. *On the Vital Statistics of Boston.* By LEMUEL SHATTUCK, of Boston.

THE oldest book of records of births in Boston was commenced in 1639, and contains some of the marriages, births, and deaths of the previous years, as early as 1630, and of the subsequent years, as late as 1663. This book also contains the birthsin several towns in Middlesex county, previous to its organization in 1647, and of Suffolk county, then including the present county of Norfolk, until 1663. Another volume embracing the period from 1663 to 1689, appears to have been lost; but a volume containing the records of births only from the earliest entries until 1689, copied from the oldest book, and the one supposed to have been lost, is still preserved. The next volume of records of births extends from 1689 to 1744, the next from 1744 to 1819. The last comprises but few pages. The records appear to have been very irregularly and imperfectly kept after about 1750, and some whole years have recently occurred in which very few records of this kind were made. During the quarter ending Dec. 31, 1838, one birth only was recorded. In some instances the births of one year are placed together in alphabetical order, in others those of several years are placed together in the same manner.

The marriages prior to 1663, were recorded in the oldest book with the births and deaths. From that time to 1689, the records of marriages are lost. Since then they are contained in five volumes. The 1st extends from 1689 to 1720; the 2d from 1720 to 1751; the 3d from 1761 to 1807; the 4th from 1807 to 1828; and the 5th from 1828 to the present time, though not in consecutive, annual order. No records are preserved of the marriages from 1663 to 1689, or from 1751 to 1761, and it is believed that very many occurred in nearly all the years which have not been recorded. Great carelessness and negligence prevails with some clergymen and magistrates in keeping the records, and in making the returns. The "intentions of marriage" are preserved in twelve volumes, extending from 1707 to the present time. Those from 1818 to 1823, are lost.

The records of *deaths* are made with the births and marriages prior to 1663. From that time until 1689 they are lost. From 1689 to 1719 they are preserved in a separate volume; and from that time till 1810 very few deaths are recorded, and such as are, appear in the volume with the births.

None of these volumes of records, either of births, marriages, or deaths, are provided with indexes; and a search for a fact concerning the personal history of an individual—the only object for which they are valuable—is attended with great labor, and is often fruitless even when the desired fact is recorded. The records are so imperfect, that no general results of any value in statistics, to determine the law of population, or of mortality, could be drawn from any abstract which we could make. It is much to be regretted that our system of registration is such, that we cannot present, in any period of our history, an accurate account of the number of births and marriages. We hope to see a system of registration soon adopted, which will supply all existing deficiencies.*

From 1701 to 1774, the keepers of the several burying-grounds made returns once a week of the number of deaths in Boston, specifying the whites and blacks separately, but not their ages. The number of baptisms was also returned by the several clergymen. Both were published in the newspapers from 1731 to 1774. From these returns an annual statement was compiled and published. We have collected these annual statements, and arranged them with that of the population, in a table, (*see Table I,*) which exhibits some important information in regard to the health and condition of the town during that period. These returns may be relied on with considerable confidence, as being very nearly correct. The population of Boston was estimated at the beginning of the last century to have been about 6,750, and the annual deaths to be 230—one in 29.3, or 3.4 per cent. The deaths from 1705 to 1714, inclusive, were 3,341, and from 1715 to 1724, 4,350, giving an annual average of about 1 in 24, or 4.09 per cent. I have estimated the population in the period from 1725 to 1734, according to two enumerations, one taken in 1722, the other in 1735. The census was taken in 1742, in 1752, and in 1765, which forms the basis of the estimation in the other periods mentioned. It will be perceived that

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* The author of this article has obtained a knowledge of the different systems of registration of births, deaths, and marriages in use in Europe, and he has prepared one which seemed to him best adapted to the institutions of our own country. He has been solicited to bring it before the state legislatures for adoption.

Boston contained more population from 1740 to 1745, than at any other period before the revolution.

TABLE I, *showing the progress of the population in Boston, for the fifty years from* 1724 *to* 1774 *divided into periods of* 10 *years each.*

In regard to	1725–1734	1735–1744	1745–1754	1755–1764	1765–1774
Population.—White .	11900	14750	14190	14390	14672
Black .	1100	1250	1541	1241	848
Total .	13000	16000	15731	15631	15520
Average annual Baptisms	528	578	474	413	443
Population to 1 baptism .	24	28	33	38	35
Deaths to 100 baptisms .	77	82	123	107	104
Average annual Deaths.—					
Whites .	407	479	585	444	462
Blacks .	95	91	86	70	59
Both .	502	570	671	514	521
White population to 1 death	29	30	24	36	31
Deaths in 100 white population . . .	3.42	2.99	4.12	3.08	3.16
Black population to 1 death	12	14	18	18	14
Deaths in 100 black population . . .	8.63	7.28	5.58	5.64	6.95
Whole population to 1 death	26	28	23	34	30
Deaths to 100 whole population . . .	3.86	3.56	4.26	3.28	3.35
Baptisms to 100 deaths .	129	120	81	93	95

It was customary, at that early period, to baptize nearly all the infants, but toward the last part of the time, embraced in the table, the practice began to be neglected. The returns of baptisms should not, therefore, be taken as a complete return of the births. We made an attempt to obtain the number of marriages, but the records are so imperfect it was abandoned.

It will be perceived, by comparing this table with others directly to be presented, that the mortality in Boston was much higher then than at the present time. The lowest mortality was in 1755 to 1764, being 514—one in 34, or 3.24 per cent. of the population, annually; the highest was in 1745 to 1754, being 671—one in 23, or 4.26 per cent. This is just double the mortality, which prevailed in 1826 to 1835, being then only 2.13 per cent. The lowest mortality in any single year was 407, or 1 in 38, in 1763; the highest 909, or 1 in 14, in 1730, and 1009, or 1 in 15, in 1752.

The mortality of the black, was much greater than that of the white population. In the first period mentioned in the table, it was as low as at any time. One in 18, or 5.64 per cent. of the black population, died, showing a difference of 2.56 per cent., as compared with the mortality of the whites. The highest mortality among the blacks was in 1725 to 1734, being 1 in 12, or 8.64 per cent. These are very striking facts, but are accounted for, in some measure, by the prevalence of the small-pox and other epidemics, which often visited the town at that time, and which seem to have been peculiarly fatal to the black population.

The *Small-Pox* prevailed in Boston as an epidemic in 1649, 1666, 1678, 1690, and 1702. It is said to have been very fatal in 1678, but we have no particular account of the number of its victims. In 1702, 302 died of this disease, being about 44 per 1000 of the inhabitants. In 1721, the disease broke out with great violence; and 5759 persons (more than half the inhabitants,) had it the natural way, of whom 844, or 1 in 7 died. Inoculation was then, for the first time, introduced, but not without great opposition. Two hundred and forty-seven were inoculated, of whom 6, or 1 in 42 died. Mather, who wrote an account of the epidemic at that time, says that "Cats had a regular small-pox, and died of it;" and that "pigeons and dunghill fowls did not lay nor hatch" during the prevalence of the disorder! In 1730, it has been estimated that 4,000 cases occurred, of which about one-tenth were by inoculation. Of these about 500 died.

In 1752, the disease again appeared in Boston, and became very fatal. The town then contained 15,684 inhabitants; of these 5,998 were supposed to have had the disease. One thousand eight hundred and forty-three removed out of town. All the remainder, except 174, had the disease by inoculation, or the natural way. We have compiled the following statement, to illustrate the prevalence of the disease at this period:—

Persons.	Natural.			Inoculated.		
	Cases.	Deaths.	Ratio per 1000.	Cases.	Deaths.	Ratio per 1000.
Whites .	5060	470	92	1985	24	12
Black .	485	69	142	139	6	43
Both .	5545	539	97	2124	30	14

It appears from this statement, that the liability to death by this disease among the blacks, was about 50 per cent. greater than among the whites, when taken in the natural way; and more than three times as great, when taken by inoculation. The deaths took place in the different months of the year, as follows:—

Month.	Natural.		Inoculated.		Total.
	Whites.	Blacks.	Whites.	Blacks.	
January	1	—	—	—	1
February	2	—	—	—	2
March	2	—	—	—	2
April	20	1	20	6	47
May	205	39	4	—	248
June	203	20	—	—	223
July	31	8	—	—	39
August	5	1	—	—	6
September	1	—	—	—	1
Total	470	69	24	6	569

In the twenty days, beginning May 19, there were 220 deaths, averaging 10 per day. On the 1st June, 25 took place.

This disease occurred again in 1764, in 1776, in 1778, and in 1792. The following statement exhibits its ravages in the last named period. The town then contained about 18,000 inhabitants, of whom 10,655 were supposed to have had the disease, 262 removed out of town, and 221 only remained unaffected, liable to the disease. The rest had it. The cases by the natural way, and by inoculation, were as follow:—

Persons.	Natural.			Inoculated.		
	Cases.	Deaths.	Ratio per 1000.	Cases.	Deaths.	Ratio per 1000.
White	214	27	125	8804	157	17
Black	18	6	333	348	7	20
Both	232	33	141	9152	165	18

The following table exhibits a view of the disease at every period of its appearance in Boston, after 1720:—

Year.	Cases.	Deaths	Ratio per 1000 of the population.		Natural.			Inoculated.		
			Sick.	Died.	Cases	Deaths.	Ratio per 1000.	Cases.	Deaths.	Ratio per 1000.
1721	6006	850	546	77	5759	844	148	247	6	24
1730	4000	500	266	33	3600	488	135	400	12	30
1752	7669	569	489	36	5545	539	97	2124	30	17
1764	5646	170	364	11	669	124	185	4977	46	9
1776	5292	57	441	10	304	29	95	4988	18	5
1778	2243	61	166	4	122	42	344	2121	29	9
1792	8346	198	460	10	232	33	142	8114	165	18

Measles prevailed in 1713, 1729, 1759, and 1772, and was the cause of many deaths.

In 1745, an epidemic fever occurred of a very fatal character.

The *Scarlet fever* was first introduced into Boston in 1735, and during that and the next year was very prevalent. About 4000 persons were sick with it, of whom 1 in 35 died. At this time it spread generally through the New England towns, carrying off in some instances whole families. In Kingston, where the usual annual mortality was not above 9 or 10, it rose in 1735 to 102, and this great increase of mortality was not unusual in other places. It is somewhat singular, that after the lapse of just about a century, it should have prevailed again as one of the most fatal diseases of New England.

A new system of registration for the deaths only went into operation in Oct. 1810, and has since been continued with some slight modifications. These records are all preserved. At first the town was divided into three districts, the north, middle, and south, and a separate register kept for each, under the direction of the Board of Health. The particulars recorded were, 1st, The date of death and burial; 2d, The age and sex; 3d, To what family belonging; 4th, The disease, or cause of death; 5th, The number or name of the tomb where interred, designating the burial ground, and whether a citizen or stranger; and, 6th, Remarks. The district system was given up in 1822, at the incorporation of the city, and the office of superintendent of burial grounds was created. This office has since been filled by Mr. Samuel H. Hewes, and he has kept the records of the deaths of the whole city. A "General Abstract of the Bill of Mortality" has been printed annually since 1811, specifying the number of deaths each month in the year, distinguishing the males from the females, and the ages under 1; 1 to 2; 2 to 5; 5 to 10; 10 to 20, and each decennial period afterwards to 100. These abstracts specify also the number of deaths by each disease, but not the age, sex, season, and other particulars, which ought to have been noticed. Heavy penalties were imposed for burying without permission; and it is presumed that all, or very nearly all, the deaths that have taken place in the city are recorded. And the "bills," as far as they go, contain a faithful abstract of the records, and may be generally relied on as correct.

TABLE II, *showing the distribution of the population of Boston according to age, sex, and colour, at seven different enumerations.*

Ages.	1765.				1790.			
	Males.	Females.	Differ'e.	Total.	Males.	Females.	Difference.	Total.
Under 16 . . .	4109	4010	+99	8119	3376			
16 and upwards	2941	3612	—671	6553	4325			
Whites . . .	7050	7622	—572	14672	7701	9576	—1875	17277
Coloured . . .	531	317	+14	848				761
Total . . .	7581	7939	—558	15520	7701	9576	—1875	18038
	1800.				1810.			
Under 10 . .	3057	3083	—26	6140	4391	4349	+42	8740
10 to 16 . . .	1406	1499	—93	2905	1860	2081	—221	3941
16 to 26 . . .	2478	2998	—520	5476	3578	3989	—411	7567
26 to 45 . . .	2999	3110	—111	6109	4165	4140	+25	8305
45 and upwards	1334	1799	—465	3133	1346	1887	—541	3233
Whites . . .	11274	12489	—1215	23763	15340	16446	—1106	31786
Coloured . . .				1174				1464
Total . . .	11974	12489	—1215	24937	15340	16446	—1106	33250
	1820.				1825.			
Under 10 . .	5283	5399	—116	10682	6206	6309	—103	12515
10 to 16 . . .	2416	2965	—549	5381	3061	3616	—555	6677
16 to 26 . . .	3564	4544	—980	8108	7622	7589	+33	15211
26 to 45 . . .	7345	5973	+1372	13318	8458	7739	+719	16197
45 and upwards	1500	2569	—1069	4069	2560	3204	—644	5764
Whites . . .	20108	21450	—1342	41558	27907	28453	—550	56364
Coloured . . .	809	931	—122	1740	974	943	+31	1917
Total . . .	20917	22381	1464	43298	28881	29396	—515	58281

1830.

Ages.	Males.	Females.	Diff'nce.	Total.	Proportion of females to 100 males.	Propor-tion each age.	Surviv'g.	Propor-tion sur-viving.	Proportion surviving each age that are in next age.
Under 5	3818	4004	—186	7822	104.87	13.14	59517	100.—	13.14
5 to 10	2941	2978	—37	5919	101.25	9.95	51695	86.86	11.44
10 to 20	5634	6391	—757	12025	113.43	20.20	45776	76.91	26.26
20 to 30	7729	7958	—229	15687	102.96	26.36	33751	56.71	46.47
30 to 40	4132	4661	—529	8793	112.80	14.78	18064	30.35	48.67
40 to 50	2168	2698	—530	4866	124.44	8.18	9271	15.57	52.48
50 to 60	1077	1413	—336	2490	131.19	4.18	4405	7.39	56.52
60 to 70	475	801	—326	1276	168.63	2.14	1915	3.21	66.63
70 to 80	164	325	—161	489	198.17	.82	639	1.07	76.52
80 to 90	31	105	—74	136	338.70	23	150	.25	90.66
90 to100	2	12	—10	14	600.00	2	14	.02	100.—
Whites	28171	31346	—3175	59517	111.26	100.00			
Colored	865	1.010	—145	1875	116.76				
Total	29036	32.356	—3320	61392	111.43				

Tables of an improved form might have been prepared from the existing records, but to render them as perfect as they ought to be, some modification in the system of keeping the records is necessary. We have compiled from the series of printed abstracts, now before us, several tables, containing important facts and deductions in relation to the vital statistics of Boston. Some others might have been presented had we gone back to the original records, but they would hardly have paid the great labour required for compilation. To render these tables more clearly understood, the condition of the population should be known. We have, therefore, compiled several tables from the different censuses, to illustrate this point.

We have already given an account of the population of Boston previous to 1775. Table II presents the particulars of the population according to the several different enumerations from 1765 to 1830. From this table we have compiled the following abstract, to exhibit the increase of the population:—

TABLE III, *showing the increase of the population at eight enumerations, from* 1790 *to* 1837.

Years.	Population.	Actual Increase.		Increase per cent.		One in	Square y'rds to each.
		Total.	Annual.	Total.	Annual.		
1790	18.038	——	——	——	——	—	201
1800	24.937	6899	689.9	38.24	3.82	26	145
1810	33.250	8313	831.3	33.33	3.33	30	109
1820	43.298	10048	1004.8	30.22	3.02	33	83
1825	58.281	14983	2996.6	34.60	6.92	14	64
1830	61.392	3111	622 2	5.33	1.06	94	62
1835	78.603	17211	3442.2	28.03	5.60	17	49
1837	80.325	1722	861.0	2.19	1.09	91	49

From this statement it appears that the greatest increase of the population was from 1820 to 1825, being 14,983, equal to an annual increase of 6.92

per cent., or 1 in 14. The least increase was in 1825 to 1830, being only 1.06 per cent. annually. The whole increase from 1790 to 1837, was 445.3 per cent., or doubling the first mentioned number about 4½ times.

In 1796, Boston, exclusive of South Boston, was estimated to contain 750 acres, or 3,630,000 square yards, including the streets. This may not have been strictly correct, but was an approximation to the truth; and probably the inhabited parts do not now contain more than that quantity of territory. This would give 201 square yards to each inhabitant in 1790, and 49 in 1837, being an increased density of 5 to 1.

TABLE IV, *showing the population living at each age of the different sexes.*

Age.	Proportion of Females to 100 Males.				Proportion of population living at each age.			
	1800	1810	1820	1825	1800	1810	1820	1825
Under 10	100.85	99.04	102.19	101.65	25.84	27.50	25.74	22.20
10 to 16	106.61	111.88	122.72	111.59	12.23	12.40	12.97	11.84
16 to 26	120.98	111.48	127.49	99.56	23.04	23.80	19.51	26.99
26 to 45	103.70	99.39	81.32	91.49	25.71	26.13	31.99	28.74
45 and upwards	134.81	140.19	171.33	125.11	13.18	10.17	9.79	10.23
Total.	110.77	107.30	102.10	101.96	100.00	100.00	100.00	100.00

The proportion of living males to living females deserves consideration. There have been in Boston more females than males. The proportion of the aggregate number of each sex of all ages was in 1790, as 100 males to 104.72 females, and in 1800, as 100 to 110.77. The proportion, however, became more equal in 1825, when it was reduced, and was as 100 to 101.96. In 1830, it was as 100 to 111.43. These facts will appear from Table IV, which also shows the census of 1830, and the proportion of each sex living at the different ages. In 1810 there were less females than males living under 10 years. At all other periods under 26 years, excepting 1825, there were more females than males. In the ages 26 to 45, there were more males than females at each enumeration excepting 1800. Above 45 there were from 25 to 70 per cent. more females than males. The most striking difference was in 1820. The proportion of the sexes then changes in the ages 26 to 45; to the ages 45 and upwards, from 81.52 to 171.33 per cent., a difference of 90 per cent. This shows the changeable nature of our population. The ages of 24 to 45 embrace the transient inhabitants—persons in single life, who come here to reside a few years, and afterwards remove. The proportion of population living at all ages will also appear from this table.

In the census for 1830, we have exhibited the proportion of males to females, and the proportion of both, living at each age; the number surviving, and the proportion per cent. of the surviving at each age; and the proportion of the number surviving each age, that do not attain the next higher age. These deductions are important, as showing the laws of longevity.

The proportion of white to coloured population has been about the same at each of the enumerations, excepting the last two, when the whites had increased, as will appear from the following statement:

Proportion.	In 1790.	In 1800.	In 1810.	In 1820.	In 1825.	In 1830.
Of whites,	95.78	95.30	95.60	95.98	96.71	96.95
Of coloured,	4.22	4.70	4.40	4.02	3.29	3.05
	100.00	100.00	100.00	100.00	100.00	100.00

This shows that in 1790, of the whole population, 95.78 per cent. were white, and the remainder, 4.22, were coloured. In 1830, the proportion of whites had increased, and the coloured decreased, 1.17 per cent.

Table V, *showing the influences of the different years on the number of the deaths, distinguishing the males from the females, and the stillborn, and the proportion to the population.*

Years.	Population.	Deaths.						Proportion to population.	
		Males.	Females	Diff'nce.	Total.	Still born.	Total.	One in	Per cent
1811	34.255	373	375	—2	748	46	794	45	2 18
1812	35.260	286	347	—61	633	48	681	55	1.85
1813	36.264	416	334	+82	750	36	786	48	2.06
1814	37.269	367	328	+39	695	32	727	53	1.86
1815	38.274	407	433	—16	830	21	851	46	2.16
1816	39.279	440	433	+7	873	31	904	45	2.22
1817	40.284	453	422	+31	875	33	908	46	2.17
1818	41.288	486	439	+47	927	46	971	44	2.23
1819	42.293	423	366	+57	789	89	878	53	1.86
1820	43.298	505	509	—4	1014	89	1103	42	2.31
Mean.		415.6	397.6	+180	813.2	47.1	860.3	47	2.09
1821	46.295	678	643	+35	1321	99	1420	35	2.85
1822	49.291	570	518	+52	1088	115	1203	45	2.20
1823	52.288	531	514	+17	1045	109	1154	50	1.99
1824	55.284	623	585	+38	1208	89	1297	45	2.18
1825	58.281	692	670	+22	1362	88	1450	42	2.33
1826	58.903	623	544	+79	1167	87	1254	50	1.98
1827	59.525	495	444	+51	939	83	1022	63	1.57
1828	60.147	603	556	+47	1159	74	1233	51	1.92
1829	60.769	600	556	+44	1156	65	1221	52	1.90
1830	61.392	532	493	+39	1025	100	1125	59	1.66
Mean.		594.7	552 3	+424	1147.0	90.9	1237.9	49	2.05
1831	64.834	676	677	—1	1353	71	1424	47	2.08
1832	68.276	840	835	+5	1675	86	1761	40	2.45
1833	71.780	679	695	—16	1374	102	1476	52	1.91
1834	75.160	765	675	—10	1440	114	1554	52	1.91
1835	78.603	991	828	+163	1819	95	1914	43	2.31
1836	79.464	831	817	+14	1648	122	1770	48	2.07
1837	80.325	875	868	+7	1743	100	1843	46	2.16
1838	81.186	937	862	+75	1799	121	1920	45	2.21
1839	82 215	863	859	+241	1722	141	1863	44	2.23
Mean.		745.7	711.6	+241	1457.3	95.2	1552.5	45	2.14

The preceding table, (Table V,) being the first compiled from the printed bills of mortality, presents a general view of the number of deaths each year, from 1811 to 1839, distinguishing the males from the females. The still-born, having never lived, are excluded from the number of deaths in all correct bills of mortality, and are here placed in a separate column. The population at the different enumerations, and the estimated population for the intervening years, and the ratio which the deaths bear to the population, are given. The least mortality in one year was in 1827, being 939, one in 63, or 1.57 per cent., and the greatest in 1821, being 1,321, one in 35, or 2.85 per cent. The average annual deaths were 813, from 1811 to 1830—one in 47, or 2.09 per cent., 1147 from 1821 to 1830—one in 49, or 2.05 per cent., and 1,552 from 1831 to 1839—one in 46, or 2.14 per cent., showing a small increase in the force of mortality.

Mortality of different Ages.—The number of deaths varies very much in the different ages, being in some much greater than in others. We have presented in table VI the number who have died under 1, between 1 and 2, 2 and 5, 5 and 10, and at each subsequent decennial period of life. This has been done for the different sexes, and in the different periods of time—the 10 years, 1811 to 1820, and 1821 to 1830, and the 9 years, 1831 to 1839, that we might institute a comparison between the different periods, to ascertain whether the proportion of deaths was the same in each, and also for the whole 29 years. The greatest number of deaths in any one period mentioned, is under one year, in the period 1831 to 1839, being 2861. The next greatest is between 20 and 30 of the same period, being 1843. The least number is between 90 and 100.

TABLE VI, *showing the influences on the number of deaths in different ages, distinguishing the males from the females, in three different periods of time.*

Age.	1811—1820.			1821—1830.			1831—1839.			1811—1839.		
	Males	Females	Total.	Males	Females	Total.	Males	Fem'ls	Total.	Males	Fem'ls	Total.
Under 1	765	610	1375	1129	833	1962	1596	1265	2861	3490	2708	6198
1 to 2	435	397	832	580	640	1220	848	933	1781	1863	1970	3833
2 to 5	267	224	491	428	365	793	849	749	1598	1544	1338	2882
5 to 10	151	133	284	233	173	406	344	275	619	728	581	1309
10 to 20	194	236	430	234	299	533	272	463	735	700	998	1698
20 to 30	548	585	1133	671	733	1404	871	972	1843	2090	2290	4380
30 to 40	509	471	980	750	642	1392	913	738	1651	2172	1851	4023
40 to 50	497	374	871	623	466	1089	651	505	1156	1771	1345	3116
50 to 60	300	260	560	389	331	720	456	365	821	1145	956	2101
60 to 70	201	255	456	233	287	520	303	343	646	737	885	1622
70 to 80	160	226	386	181	248	429	198	298	496	539	772	1311
80 to 90	74	119	193	89	137	226	85	140	225	248	396	644
90 to 100	5	24	29	11	26	37	15	36	51	31	86	117
Sum	4106	3914	8020	5551	5180	10731	7401	7062	14463	17058	16176	33234
Unknown	50	62	112	396	343	737	56	34	90	502	439	941
Total	4156	3976	8132	5947	5523	11470	7457	7116	14573	17560	16615	34175

TABLE VII,

Showing, in three different periods of time, the number dying and the number surviving, and the proportion per cent. of each at the different ages; and also the proportion per cent. of those who survive the first mentioned age, that die before they attain the next age.

Age.	1811—1820.					1821—1830.					1831—1839.				
	Dying of the first and under the second mentioned age.		Surviving the first mentioned age.		Proportion per cent. of those who survive the first mentioned age who die before the next age.	Dying of the first and under the second mentioned age.		Surviving the first mentioned age.		Proportion per cent. of those who survive the first mentioned age who die before the next age.	Dying of the first and under the second mentioned age.		Surviving the first mentioned age.		Proportion per cent. of those who survive the first mentioned age who die before the next age.
	Whole number.	Proportion per cent.	Whole number	Proportion per cent.		Whole number.	Proportion per cent.	Whole number.	Proportion per cent.		Whole number.	Proportion per cent.	Whole number.	Proportion per cent.	
Under 5	2698	33.64	8020	100.00	33.64	3975	37.04	10731	100.00	37.04	6240	43.09	14483	100.00	43.09
5 to 10	284	3.54	5322	66.36	5.33	406	13.79	6756	62.96	6.00	619	4.27	8243	56.91	7.60
10 to 20	430	5.36	5038	62.82	8.53	533	4.97	6350	59.17	8.39	735	5.08	7624	52.64	9.64
20 to 30	1133	14.13	4608	57.46	24.58	1404	13.08	5817	54.20	24.13	1843	12.73	6889	47.56	26.75
30 to 40	980	12.22	3475	43.33	28.20	1392	12.97	4413	41.12	33.85	1651	11.40	5046	34.83	32.73
40 to 50	871	10.86	2495	31.11	34.90	1089	10.15	3021	28.15	36.04	1156	7.98	3395	23.43	34.05
50 to 60	560	6.99	1624	20.25	34.48	720	6.71	1932	18.00	37.31	821	5.67	2239	15.45	36.66
60 to 70	456	5.68	1064	13.26	42.85	520	4.84	1212	11.29	42.90	646	4.46	1418	9.78	45.55
70 to 80	386	4.81	608	7.58	63.48	429	4.00	692	6.45	61.99	496	3 42	772	5.32	64.24
80 to 90	193	2.41	222	2.77	86.98	229	2.17	263	2.45	85.93	225	1.55	276	1.90	81.22
90 to 100	29	.36	29	36	100.00	37	.34	37	.34	100.00	51	.35	51	.35	100.00
	8020	100.00				10731	100.00				14483	100.00			

In table VII we have given the aggregate number of deaths, and calculated the proportion per cent. of the deaths at each specified interval of age. It appears that 2698, or 33.64 per cent., of the whole deaths in 1811 to 1820 were under 5 years of age, and that 14.13 per cent., the next greatest proportion, was between the ages of 20 and 30. In the next column of this table we have presented the number who survive each specified age, and in the fourth column the proportion per cent. of the surviving. It appears from this table that 5322, or 66.36 per cent., of the deaths in 1811 to 1820 survived the age of 5 years; 1624, or 20.25 per cent., survived the age of 50 years; and 222, or 2.77 per cent., survived the age of 80 years. In the fifth column we have presented the law of mortality calculated from the deaths alone, and given the proportion per cent. of the number of those who were alive at the beginning of each specified age, and who died before the next specified age. Of the whole deaths, 33.64 per cent. were under 5 years; of those who survived 5 years, 5.33 per cent. died before they attained 10 years; of those who survived 10 years, 8.53 per cent. died before they attained 20 years; and so on for each successive period, as appears in the table. We have presented these four different kinds of facts concerning the other periods, 1821 to 1830, and 1831 to 1839. A comparison of these facts presents some very important considerations.

It has been repeatedly said that the great improvements in the science of medicine—in the nature and treatment of disease, and other causes, have increased the average longevity of mankind; that life is more valuable now than it formerly was; and that these improvements are constantly going on. The value of life is estimated by the number of years we live. A long life is more valuable than a short one. It is said to be improved in value, when the various circumstances, which surround us, add to the number of years of existence, as compared with other causes, which have existed in other places or periods of time. No correct conclusion can be made in regard to such comparison, except by a careful examination of the facts. A sufficient number of these is not, however, as yet attainable in this country to enable us to investigate the subject so fully and satisfactorily as could be desired. We can present some important ones in relation to Boston.

By table I we are enabled to compare the ratio of mortality in Boston to the population, during a portion of the last century, with that prevailing at the present time, after an interval of nearly 100 years. There was then 1 death to about 30 or 35, or 3 per cent., of the population. Now according to table IV there is 1 in about 45, or 2.10 per cent., of the population. This shows a very great improvement in the relative value of life. A comparison of other facts in the two tables will also present some very striking consisiderations. In consequence of the ages of the deaths not being then given, we are unable to estimate the comparative value of life at the different ages.

To estimate accurately the value of life in any place, two important elements are necessary to be known: first, the number of the living at each age, and, secondly, the number of deaths at the same age. That we might make a calculation approximating to the truth in regard to Boston, we have taken the population of 1830, according to table II, and have distributed the 1875 blacks among the whites of the different ages according to their respective proportions. From the bills of mortality we have ascertained the number of deaths for the 10 years, 1826 to 1835, five years before and five years after the census was taken, and have distributed the whole, including 126 deaths whose ages were unknown, in the same manner in regard to age as the living. One-tenth of these is the annual average, and consequently the number of deaths for 1830. By dividing one by the other, the annual proportion of the deaths to the living at each age will appear, as in the following statement. We have added the results of a similar calculation made by Mr. Milne, in his valuable treatise on life insurance, respecting the value of life in Carlisle, in England, which is there considered a favourable specimen of healthy life.

Statement showing the population of Boston for 1830, *the deaths for* 10 *years,* 1826 *to* 1835, *and the proportion of the annual deaths to* 100 *constantly living in Boston and Carlisle.*

Age.	Population in 1830.	Deaths 1826–1835.	Centesimal proportion of deaths to the living.		
			In Boston.	In Carlisle.	Difference.
Under 5	7822	5176	6.48	8.22	—1.74
5 to 10	5919	515	.85	1.02	—.17
10 to 20	12025	659	.54	.58	—.04
20 to 30	15687	1719	1.07	.75	+.32
30 to 40	8793	1656	1.84	1.05	+.79
40 to 50	4866	1130	2.27	1.43	+.84
50 to 60	2490	775	3.05	1.82	+1.23
60 to 70	1276	607	4.63	4.12	+.51
70 to 80	489	465	9.12	8.29	+.83
80 to 90	136	235	16.94	17.56	—.52
90 to 100	14	44	30.76	28.44	+2.32
	59517 Blk's1875	12981 Unk'n 126	Mean2.13	2.50	
Total	61392	13107			

By this statement it appears that the proportion of deaths to the living is greater in Carlisle than in Boston under the age of 20, and between the ages of 80 and 90. At the other ages it is greater in Boston. Between the ages of 50 and 60, and 90 and 100, there is the greatest difference, being in the former 1.23, and in the latter 2.32. The mean of all ages is 2.13 per cent. in Boston and 2.50 per cent. in Carlisle, showing a difference of .37 in favour of the former. This presents the law of mortality in Boston, as accurately as it could be done from any data at present existing. It is, however, difficult, if not impossible, to determine it with perfect precision by any general statement concerning a population so changeable as that of our city.

We have arranged the tables including the deaths from 1811 to 1839 in such form, that we can institute a comparison between the relative mortality of the different periods, 1811 to 1820, 1821 to 1830, and 1831 to 1839. This comparison presents some very striking facts, and shows that, although the average value of life is greater now than during the last century, it is not so great as it was twenty years ago; that it was at its maximum in 1811 to 1820, and that it has since somewhat decreased. It appears that 33.64 per cent. of the deaths in 1811 to 1820 were under 5 years of age, 37.04 per cent. in 1821 to 1830, and that 43.09 per cent. in 1831 to 1839, showing a gradual increase of the relative mortality under that age, and between the first and the last given period, a difference of 9.45 per cent. or a proportional increase of mortality of 28 per cent.!

It is a melancholy fact, and one which should arrest the attention of all, that 43 per cent. or nearly half of all the deaths which have taken place in Boston during the last nine years, are of persons under 5 years of age; and the proportional mortality of this age has been increasing. A comparison may be made between other ages by table VII in two ways, one by taking the difference between the proportions per cent. of the dying each age in the different periods, or by subtracting the second columns of each period from each other; and the other by taking the difference between the proportion per cent. of those who survive the first mentioned age, and die before they attain the next age, or by subtracting the fifth columns of each period from each other. The first method is not so correct as the second; for, if a greater proportion die under 5 years of age, there must of course be a less proportion die at each of the other ages, even if the number proportional to the living at that age be the same. It is not so in regard to the other method. The mortality of one age is not dependent on any other, and the table shows the proportion of the whole number of deaths, who attain the age of 5, 10, 20, or any other given period, who die before they attain the next given period. This calculation shows the law of mortality for a place as accurately as can be shown from any calculation from records of deaths alone. We have given below the difference between the proportion per cent. of the deaths at each period. The sign plus shows that the mortality is greater, and minus that it was less in the last period than the first.

	Difference between 1811 to 1820 and 1821 to 1830.		Difference between 1821 to 1830 and 1831 to 1839.		Difference between 1811 to 1820 and 1831 to 1839.	
AGE	*2d column.*	*5th column.*	*2d column.*	*5th column.*	*2d column.*	*5th column.*
Under 5	+3.40	+3.40	+6.05	+60.5	+9.45	+9.45
5 to 20	+.25	+.67	+.48	+1.50	+.73	+2.17
10 to 20	—.39	—.14	+.11	+1.25	—.28	+1.11
20 to 30	—1.05	—.45	—.35	+2.62	—1.40	+2.17
30 to 40	+.75	+5.65	—1.57	—1.12	—.82	+4.53
40 to 50	—.71	+1.14	—2.17	—1.99	—2.88	—.85
50 to 60	—.28	+2.83	—1.04	—.65	—1.32	+2.18
60 to 70	—.84	+.05	—.38	+2.65	—1.22	+2.70
70 to 80	—.81	—1.49	—.58	+2.25	—1.39	+.76
80 to 90	—.24	—1.05	—.62	—4.71	—.86	—5.76
90 to 100	—.02		+.01		—.01	

It appears from this table that the value of life has slightly improved between the ages 30 and 60 and over 80, the chances being somewhat greater than they were twenty years ago, that a person of these ages will live to the next higher age. Under 30 the mortality has increased; the greatest however is under 5. The mortality for 1838 was greater than in any any other year, being 47.65 wanting but 2.35 per cent. of half the whole deaths, showing in that year a greater mortality under 5, than the average eight previous years, of 4.68 per cent., and that of the first ten years of 14.51 per cent.

The causes of this increasing and alarming mortality should be investigated, and, if possible, removed. We have endeavoured to ascertain some of these causes. Allowance should, we suppose, be made for the customs of the times. More luxury and effeminacy in both sexes prevail now than formerly; and this may have had some influence in producing constitutional debility, and the consequent feeble health of children. The nursing and feeding of children with improper food is another cause. The influence of bad air in confined, badly located, and filthy houses, is another and perhaps the greatest. Epidemic diseases which are particularly prevalent among children have increased. It will hereafter be shown that scarlet fever has prevailed very much the last nine years, and has increased the mortality. In the period 1811 to 1820, this disease produced 13 per 1000 of the whole deaths. In 1831 to 1838, it produced 489. Other infantile diseases have also increased. These considerations would, perhaps, sufficiently account for the increased mortality under 5 years of age.

We had supposed that a greater mortality prevailed in certain localities, and in certain classes of our population than in others, and we have endeavoured to ascertain how far the supposition is founded on fact. Though the records do not specify, as they ought, the place of residence of those whose deaths are recorded, they do give, in all cases, the places of burial. We have compiled the following statement from a list of all those, who were buried from Boston in the South Boston and Charleston Roman Catholic burial grounds.

Of the 1987 Catholic burials during the six years, 1833 to 1838, comprising 1028 males and 958 females, 61.39 per cent. were under 5 years. The still-born during the same time, and in the same religious denomination, not included in the above, were 125, or 5.77 per cent. of the whole burials; 112, or about 5½ per cent. only, lived to see 50 years of age, and 30, or less than 2 per cent. lived to 70. During the year 1838 there were 439 burials, of whom 303, or 171 males and 132 females, were under 5; and 136, or 57 males and 79 females, were over 5. This is a mortality of 75 per cent. of the whole male deaths, and 60 per cent. of the whole female deaths under 5; leaving 25 per cent. only of the males and 40 per cent. of the females, or 31 per cent. of both sexes, to survive that early age. This shows a great increase in mortality, and will account for the increase of the deaths under 5 years of age. The influx of unacclimated foreign emigrants, and the great number of families crowded into the houses in Broad street, Ann street, and other densely populated parts of the city, render the air very impure, and expose the lives of infants, who are compelled to breathe it, to almost inevitable death. The influences of such circumstances are not confined to the places where they exist, but are extended to the population in the neighbourhood, and epidemics are generated, which are no doubt injurious to the general health of the city.

Mortality of different Sexes.—The difference in the mortality of the two sexes is given in tables V and VI, from which it appears that there were 180 more female than male deaths in 1811 to 1820; 424 in 1821 to 1830, and 341 in 1831 to 1839. There were four years in the first period, and three in the last only, when there were more male than female deaths. The proportion of the different sexes will appear from the following statement.

		Deaths.	Average.	Proportion.		
1811 to 1820	Males	4156	415	51.11	as 100	or 104.59
	Females	3976	397	48.89	to 95.66	100.
	Total,	8132	813	100.00		
1821 to 1830	Males	5947	594	51.85	as 100	or 107.67
	Females	5523	553	48.15	to 92.87	100
	Total,	11470	1147	100.00		
1839 to 1839	Males	7457	828	51.17	as 100	or 104.79
	Females	7116	790	48.83	to 95.42	100
	Total,	14573	1618	100.00		

The proportion of male and female deaths to the population in the years when the census was taken, was as follows:

	One in		Excess.	Proportion per cent.		Excess.
1820	Males 41	Females 44	3	Males 2.41	Females 2.27	14
1825	" 41	" 43	2	" 2.32	" 2.27	5
1830	" 54	" 65	11	" 1.83	" 1.52	31
1835	" 39	" 48	9	" 2.54	" 2.07	47

This statement shows that the agents of death are uniformly more active with male than female life.

In the following table we have given the number of deaths of each sex for the different intervals of age, as in table V, and the proportion of each sex for the period 1811 to 1838.

Age.	Observed.		Calculated.	
	Males.	Females.	Males.	Females
Under 1	3315	2572	56.31	43.69
1 to 2	1756	1861	48.54	51.46
2 to 5	1426	1232	53 65	46.35
5 to 10	675	537	55.69	44.31
10 to 20	669	942	41.34	58.66
20 to 30	2009	2159	48.20	51.80
30 to 40	2071	1775	53.84	46.16
40 to 50	1693	1278	56.99	43.01
50 to 60	1099	915	54.56	45.44
60 to 70	700	849	45 19	54.81
70 to 80	521	741	41.28	58.72
80 to 90	241	376	39.06	60.94
90 to 100	31	83	27.18	72.82

It appears from this statement, that at the ages under 10 years, and between 30 and 60, more males than females die, the proportion rising in 40 to 50, as 56.99 to 43.01 per cent. At the other periods specified there are less male than female deaths; the difference after the age of 60 continually increasing, until 90 to 100, when it was as 27.18 to 72.82 per cent. By table II it appears that there were a greater number of males than females at any age among the living population. A comparison of these with the deaths will show that at certain ages a greater proportional mortality prevails among males, and at other ages among females.

Mortality of the Different Seasons of the Year.—In table VIII we have arranged the deaths in each period according to the months in which they occurred, distinguishing the males from the females, and placing before the numbers the sign minus, when it was less, and the sign plus, when it was greater than the mean. In the third column we have given the proportion, which the total of each month bears to 12000, or 1000 per month, and in the fourth column, the number, indicating the order of the month in regard to mortality—the highest being numbered 1. It appears from this statement, that the months of August, September, and October, have the highest mortality. December is number 4 in each period; November 5 in the last, and 6 in the others. June has uniformly the least mortality. If the proportions are arranged according to the seasons of the year, they will be as follows:

	1811–1820.	1821–1830.	1831–1839.
Winter,	2.801	2.775	3.000
Spring,	2.842	2.825	2.622
Summer,	2.807	2.996	2.800
Autumn,	3.550	4.424	4.578
	12,000	12,000	12,000

TABLE VIII,

Showing the influences of the different months of the year on the number of deaths, distinguishing the males from the females, and the stillborn, and the proportion each month, at three different periods of time.

Month.		1811—1820.					1821—1830.					1831—1839.					Stillborn. 1811—1839.	
No	Name.	Males.	Females.	Total.	Proporti'n.	Order.	Males.	Females.	Total.	Proport'n.	Order.	Males.	Females.	Total.	Proport'n.	Order.	Number.	Proporti'n
1	January	—309	—337	—622	0.918	8	+449	+477	—926	0.969	7	—591	+582	—1173	0.961	6	191	8.40
2	February	—322	—283	—589	0.869	10	—392	—390	—782	0.818	11	—539	—549	—1088	0.876	9	176	7.62
3	March	+367	+341	—676	0.997	5	—478	—413	—891	0.932	10	—556	—575	—1131	0.907	7	207	9.08
4	April	—327	—311	—622	0.918	9	—481	—426	—907	0.949	8	—563	—534	—1097	0.905	8	180	7.48
5	May	—333	—308	—628	0.927	7	—491	—411	—902	0.944	9	—488	—494	—982	0.810	11	185	7.76
6	June	—303	—254	—538	0 794	12	—423	—341	—764	0.799	12	—498	—458	—956	0.786	12	180	7.67
7	July	+354	—256	—582	0.859	11	+501	—440	—941	0.984	5	—590	—502	—1042	0.847	10	192	8.17
8	August	+416	+392	+782	1.154	3	+576	+555	+1131	1.183	2	+739	+678	+1417	1.167	3	217	9.45
9	September	+436	+405	+826	1.219	2	+661	+585	+1246	1.304	1	+799	+749	+1548	1.283	1	201	8.76
10	October	+461	+466	+906	1.337	1	+565	+544	+1109	1.160	3	+726	+698	+1424	1.174	2	208	8.58
11	November	+357	—333	+674	0.994	6	—457	+470	—927	0.970	6	+689	+644	+1333	1.121	5	191	8.31
12	December	—344	+364	+687	1.014	4	—473	+471	—944	0.988	4	+729	+653	+1382	1.163	4	204	8.72
	Total	4329	4050	8132	12.000		5947	5523	11470	12.000		7457	7116	14573	12.000		2332	100.—
	Mean	$352\frac{5}{12}$	$337\frac{1}{2}$	$677\frac{2}{3}$			$495\frac{7}{12}$	$460\frac{1}{4}$	$955\frac{5}{6}$			$621\frac{5}{12}$	593	$1214\frac{5}{12}$			$194\frac{4}{12}$	

In table IX, we have endeavoured to arrange the facts for one period, 1821–1830, to ascertain what influence the seasons have upon the mortality of different ages. We have given the whole deaths during the time, the mean or average of each month at each age, and the difference from this mean, placing the sign minus, when the mortality of the month at any age was less, and plus when it was greater, than this mean.

Table IX, *showing the influence of the different months of the year on the number of deaths, in the different ages, for the years* 1821—1830, *inclusive.*

Age.	Whole deaths.	Average or monthly mean.	January. Deaths.	January. Diff'ce from mean.	February. Deaths	February. Diff'ce from mean.	March. Deaths.	March. Diff'ce from mean.	April. Deaths.	April. Diff'ce from mean.	May. Deaths.	May. Diff'ce from mean.
Under 1	1962	163.50	151	—12.60	121	—42.50	140	—23.50	140	—23.50	123	—40.50
1 to 2	1220	101.67	68	—33.67	46	—55.67	65	—36.67	80	—21.67	73	—28.67
2 to 5	793	66.08	64	—2.08	47	—19.08	65	—1.08	62	—4.08	69	+2.92
5 to 10	406	33.83	33	—.83	21	—12.83	23	—10.83	41	—7.17	29	—4.83
10 to 20	533	44.42	46	+1.58	40	—4.42	40	—4.42	31	—13.42	52	+7.58
20 to 30	1404	117.—	114	—3.—	106	—11.—	114	—3.—	123	+6.—	122	+5.
30 to 40	1392	116.—	112	—4.—	98	—18.—	126	+10 —	123	+7.—	123	+7.—
40 to 50	1089	90.75	88	—2.75	88	—2.75	93	+2.25	89	—1.75	105	—14.25
50 to 60	720	60.—	76	+16.—	51	—9.—	58	—2.—	54	—6.—	65	+5.—
60 to 70	520	43.34	42	—1.34	49	+5.66	51	+7.66	53	+9.66	35	—8.34
70 to 80	429	35.75	36	+.25	50	+14.25	38	—2.25	33	—2.75	35	—.75
80 to 90	226	18.83	31	+12.17	23	+4.17	18	—.83	22	+3.17	13	—5.83
90 to 100	37	3.08	8	+4.92	3	—.08	3	—.08	1	—2.08	3	—.08
Total	10731	894.25	869	—25.25	743	—151.25	834	—60.25	852	—42.25	847	—47.25

Age.	June.		July.		August.		September.		October.		November.		December.	
Under 1	115	—48.5	158	—5.50	241	+77.50	293	+130.50	192	+28.50	145	—18.50	144	—19.50
1 to 2	64	—37.65	102	+.33	170	+68.33	224	+122.33	157	+55.33	101	—.67	70	—31.67
2 to 5	71	+4.92	47	—19.08	72	+5.92	78	+11.92	77	+10.92	70	+3.92	72	+5.92
5 to 10	42	+8.17	25	—8.83	46	+12.17	39	+5.17	36	+2.17	34	+.17	37	+3.17
10 to 20	40	—4.42	49	+4.58	42	—2.42	55	+10.58	47	+2.58	46	+1.58	45	+.58
20 to 30	75	—42.—	122	+5.—	129	+12.—	125	+8.—	149	+32.—	100	—17.—	125	+8.
30 to 40	101	—15.—	139	+23.—	100	—16.—	125	+9.—	124	+8.	124	+8.—	97	—19.—
40 to 50	60	—30.75	101	+10.25	89	—1.75	95	+4.25	103	+12.25	94	+3.25	83	—7.75
50 to 60	60	—0 —	58	—2 —	55	—5.	53	—7.	54	—6 —	56	—4 —	80	+20.
60 to 70	32	—11.34	38	—5.34	48	+4.66	41	—2.34	51	+7.66	38	—5.34	42	—1.34
70 to 80	29	—6.75	29	—6.75	33	—2.75	26	—9.75	28	—7.75	50	+14.25	42	+6.25
80 to 90	13	—5.83	10	—8.83	23	+4.17	13	—5.83	18	—.83	20	+1.17	22	+3.17
90 to 100	0	—3.08	5	+1.92	0	—3.08	0	—3.08	4	+.92	3	—.08	7	+3.92
Total	702	—192.08	883	—11.25	1048	+153.75	1167	+272.75	1040	+145.75	881	—13.25	866	—28.25

From this table the following abstract in relation to the seasons has been compiled.

	Under 20 years.	20 to 60.	60 and upwards.
Spring,	— 205.50	+ 43.75	+ 3.
Summer,	+ 56.50	— 62.75	— 49
Autumn,	+ 366.50	+ 70.75	+ 10
Winter,	— 222.50	— 35.75	+ 52

From this statement it appears that the seasons have the greatest influence on the mortality of persons under the age of 20 and over that of 60—the summer and autumn being most fatal with the former, and winter with the latter. This is the only general law we can deduce from the tables. If we examine and compare particular months and ages a striking difference will appear in the mortality, but not enough to deduce any general law from it.

The Stillborn.—The number and proportion of the stillborn burials will appear from the following statement:

	1811-1820		1821-1830		1831-1839	
	Number.	Proportion.	Number.	Proportion.	Number.	Proportion.
Deaths,	8,132 =	95.52	11,470 =	92.66	14,573 =	93.87
Stillborn,	471 =	5.48	909 =	7.34	952 =	6.13
Total burials,	8,603	100.00	12,379	100.00	15,525	100.00

The proportion of the stillborn to the whole burials was 1.82 per cent. in the second, and .65 per cent. in the third period, more than in the first. By table VIII it appears that the month producing the highest proportion was August, and that March was the next highest. There appears, however, to be less variation, in regard to the seasons, in these than in the other deaths.

DISEASES.—In compiling an abstract of the diseases, or causes of death, we have confined ourselves to the printed bills of mortality, as we have done in preparing the other tables, and have not gone back to the original records. If this had been done, nothing of great importance, in addition, would have been obtained, unless an entire new set of tables had been formed, which should distinguish each case with respect to age and sex. The records in this respect are not full, and probably they are not always correct in regard to the cause of death inserted. The bills, however, contain the amount of all the deaths in the city, and it is presumed that they also contain a faithful abstract of the records concerning the diseases. There has been considerable difficulty, and great care and labour has been expended, in arranging the diseases from the different annual bills themselves. The nomenclature has been several times altered, and a disease is often returned one year under a name differing from that of the same disease contained in the return of another year, and even in the same year, one and the same disease often appears under two synonymous names, sometimes under the popular, and sometimes under the scientific name, or under both popular names.

Another feature of the bills is the indefinite idea conveyed by the names often given to the diseases. It appears from table XI, that of the whole deaths 111.6, 167.1, and 85.8 per 1000, in the respective period, were returned as occurring from unknown causes, and that 267.6, 160.5, and 158.4, per 1000, from diseases whose seat or character was undetermined. These two classes amount on the average to about one-third of the whole deaths. There are also many cases returned under the name of "Rupture," "Debility," "Tumour," "Infantile Diseases," "Complication of Disorders," &c.; and another class under the general name of "Complaint," "Disease of the Heart," or "Disease of the Lungs," &c., without specifying the particular kind or type of the disease. This is a great defect in our records and tables; and it should arrest the attention of the medical profession, whose reputation with that of the city, is in some respects involved in it. These imperfections in bills of mortality, however, are not peculiar to Boston. The same defect, to a greater or less extent, has existed in those published in other places in this country, and until recently in Great Britain. It is to be attributed to the imperfections of our system of registration, to the ignorance, carelessness, or entire neglect, of those whose duty it is to make the returns, and to the want of proper forms and classification of our printed tables.

In 1836 a nomenclature, revised and considerably improved, was printed by the city; but it is believed that some further modification is necessary to make it as perfect as it should be. Some names might be omitted, and others substituted, and the whole arranged in two forms, one in alphabetical and numerical order, the other classed in groups according to the seat of, or parts affected by, the disease. In this way the nomenclature might be rendered more simple and exact; and when made, a form of a return should be prepared and every person concerned should not be requested merely, but required to conform to it in all respects to the extent of his power; and no burial should be permitted until the return is first obtained. In 1836 a circular was addressed by the city authorities to the members of the medical profession, and to the funeral undertakers, requesting them to conform to the new nomenclature, but from the fault of one party or the other, the returns relative to the *cause of death* are still defective.

From these remarks some of the difficulties, which have presented themselves in preparing the following tables, will be perceived. The tables will, however, imperfect as they are, convey much important information, and suggest how much more valuable tables of this kind would have been, if the original returns, from which they were compiled, had been made full and uniformly correct; and the annual printed abstracts themselves prepared in a different form, and on the principles of accurate classification.

It has been considered sufficient by many writers on this subject to prepare the tables, so as to exhibit the number of the deaths by each disease for certain definite periods of time given. But this information appears to fall short of the result which ought to be presented in such tables. To render them useful, a comparison should be made between the number of deaths by each disease, and the whole number of deaths in a certain given period, and this result should be again compared with a similar result concerning other periods. In this way the prevalence of any particular disease compared with that of other diseases at the same period, and with same diseases at different periods, may be at once seen, and a judgment formed from the per centage what proportion of deaths that particular disease occasions, and whether it be on the increase or decrease. The sex, age, and place of nativity of the diseased, and the season of the year in which the deaths occurred, are not stated in connection with the diseases in our printed tables, but they should be. The fatality of disease depends much on the age of the patients, and it is not the same in childhood, manhood, and old age, nor with the different sexes, and in the different months of the year. It is very important to know all such facts in relation to each disease, and the danger that man has to encounter in all ages, and under all circumstances. It would also be important, if practicable, to know the number of deaths by each disease in proportion to the population, distinguishing them according to their ages. When facts like these are known they will lead to inquiries into the causes, which have produced an increase or diminution of disease, under different circumstances, and lead to the adoption of the proper remedies.

The following tables have been arranged on the basis of the nomenclature contained in the valuable Report of the Registrar-General of Births, Deaths, and Marriages in England, with such alterations as seemed necessary to render them more simple, and better adapted to our circumstances. Causes of death of a similar character, though entered under different names in different years, have been classed together, so as to show, as far as practicable, the prevalence of the same disease during the whole period. Table X contains the number of deaths by each disease in every year from 1811 to 1839 inclusive. They are divided into three periods, the first from 1811 to 1820, the second from 1820 to 1830, and the third from 1830 to 1839 inclusive, and the amount of each given in a separate column. By comparing these numbers together the relative mortality produced by each different disease, and whether it increases or diminishes, may be seen. It is necessary, however, to bear in mind that a greater number does not always indicate an increase of mortality. The increase of the population, and consequent relative increased number of deaths, must always be taken into view. The deaths, exclusive of the stillborn, from October 1810 to 1820, were 8,469, and from 1821 to 1830 they were 11,470, being an increase of 3001, or nearly 3.54 per cent. annually. During the nine last years, from 1831 to 1839, the deaths were 14,573, being an increase of 3,103, or 3. per cent. annually. This shows a little increase in the force of mortality as compared with the increase of population, as has already been shown. Table XI shows the comparison in regard to the several classes of diseases.

FIRST DIVISION.—*Endemic, Epidemic, and Contagious Diseases.*—This class of diseases is the great index to the state of health of a people, and determines more than any other its character in different locations, and in different periods. We have subdivided this class into *fevers*, *eruptive fevers*, and others *not classified*. (See table X.)

Fevers.—A variety of opinions prevails in regard to the nomenclature and arrangement of the different kinds of fevers. We have adopted, as far as circumstances will permit, the division contained in the American edition of Marshall Hall's Practical Medicine, though it does not agree with the Reports of the Registrar-General of Births and Deaths in England, nor with the Supplement to the Encyclopedia of Practical Medicine. There are many cases, found in the Boston tables, returned as "fever" only, without any specification of kind or type. A great variety of names is also given, some of which have been regarded as synonymous. Under *Synochus* are included all of a mixed character, or not clearly defined, which appear in the printed tables, such as "fever," "anomalous fever," "bilious," "catarrhal," "country," "isolated," "miliary," "acute synochus," &c. The term "typhoid" does not appear in the bills until 1837, and is therefore omitted. Under *Typhus* are included such as "brain," "congestive," "continued," "inflammatory," "jail," "malignant," "nervous," "putrid," "typhoid," &c. We have arranged cases, which appeared in the printed tables as "lung fever," and "pleurisy fever," under *Pneumonia*, or inflammation of the lungs; "worm fever," under *Worms;* "rheumatic fever," under *Rheumatism;* "scarlet fever," under *Scarlatina;* "puerperal" and "child-bed fever," under *Diseases of Child-bed.* The deaths by fevers of all kinds were 749, 604, and 721, or 88.4, 52.7, and 49.5 per 1000 of the whole deaths in the respective periods, showing a decrease of 35.7 in the second, and 3.2 in the third. By looking at the different fevers in the tables it will be perceived, that typhus has produced the greatest number of deaths, but still it has very much decreased; being 623, 458, and 611, or 73.5, 39.9 and 41.9 per 1000, showing the last eight years a small increase on the previous 10, but not more than half the proportion of the period 1811 to 1820. The greatest number in one year was 119, in 1818. Ten cases of yellow fever occurred in 1816.

2. *Eruptive Fevers.*—The diseases of this class occur very irregularly. They have, however, increased. There occurred 64, 402, and 1402, or 7.5, 35.1, and 96.2 per 1000 in the respective periods, the last period showing more than 13 times the mortality of the first. Each of the diseases excepting *thrush*, shows an increased mortality. *Erysipelas* has increased from 1, in the first, to 65 in the last period. *Measles* was very fatal in 1821, 1825, 1829, 1832, and particularly in 1835, when 188 died of this disease: 28, 332, and 340, or 3.3, 28.9, and 23.1 per 1000 of the whole deaths occurred from this disease in the respective periods. Under *Scarlatina* are included the cases in the bills entered as "scarlet fever," "putrid sore throat," "cynanche maligna," "ulcerated sore throat," "throat distemper," "canker rash," &c., being considered nearly synonymous. Cases of this kind have increased since 1821 to 1830, from 13 to 489! It has become one of the most fatal of the eruptive fevers. The suddenness of its attack, the irregular mode of its operation, and its generally fatal termination, has rendered it one of the diseases most to be dreaded. The greatest number in one year was in 1839, when 222 died. The next greatest was 200 in 1832. To the prevalence of this disease may be attributed, in some measure, the increased mortality of children under five years of age. The recorded cases of *Small pox* have been principally at the quarantine establishment at Rainsford Island. It never prevailed in the city, as an epidemic, during the period under review, until the autumn of 1839. It then spread generally through the city, and produced 60 deaths before the close of the year.

3. *Not classified.* We have adopted this term to designate such endemic, epidemic, or contagious diseases as are not included in either of the foregoing classes. Under *Cholera* are included cholera morbus, and also 78, 89, and 251 cases in the respective periods which are entered as "cholera infantum," and also 78 cases of Asiatic or spasmodic cholera, which occurred in 1832. *Croup* includes the cases of "hives," and "cynanche tra-

chealis." This disease resembles quinsy, subsequently classified under the diseases of the organs of respiration; and the cases may not all be correctly entered in their respective subdivisions. It was thought best, however, to preserve a separate classification. Under *Dysentery* are included the cases of "diarrhœa," having so closea resemblance as to be here classed together. The number of deaths by each disease of this class, excepting *Hydrophobia* and *Syphilis*, have increased, though dysentery has not produced so great a proportion in the nine last years, as it did in the previous ten. The following statement will show the compartive prevalence of each of the principal diseases:

	1811—1820.		1821—1830.		1831—1839.	
Diseases.	Number.	Ratio per 1000.	Number.	Ratio per 1000.	Number.	Ratio per 1000.
Cholera,	122	14.4	149	12.9	407	27.9
Croup,	43	5.	245	21.3	376	25.9
Dysentery,	115	13.5	429	37.4	372	25.5
Hooping Cough,	78	9.2	184	16.0	256	17.5

The total of this class of diseases was 380, 1031, and 1499, or 44.9, 89.9, and 102.9 per 1000 in the respective periods.

Second Division.—*Sporadic Diseases.*

1. *Of the Nervous System and Senses.—Brain, Spinal Marrow, Nerves, Eyes, Ears.*—Under *Convulsions* we include cases entered as "fits," "spasms," &c., which are no doubt sometimes erroneously considered as synonymous terms; under *Hydrocephalus* cases of "dropsy in the head," "effusion of the brain," "hydrocephalus internus," &c.; under *Phrenitis* cases of "brain fever," "inflammation of the brain," &c. It appears from the tables that the whole of the diseases of this class have been 562, 980, and 1515, or 66.4, 85.4, and 104. per 1000 in the different periods, showing a slight increase. The entries under each class, excepting epilepsy, insanity, and tetanus, also show an increase. *Insanity* has not appeared to increase, though some allowance should be made for the patients afflicted with this disease, who go to the Lunatic Asylums at Worcester and Charlestown, and sometimes die there. If these were considered in our reports they would probably show a different result, and a slight increase of the disease. The following statement shows the proportional prevalence of the three principal diseases of this class.

	1811—1820.		1821—1830.		1831—1839.	
Diseases.	Number.	Ratio per 1000.	Number.	Ratio per 1000.	Number.	Ratio per 1000.
Apoplexy,	109	12.8	107	9.3	162	11.1
Convulsions,	229	27.	309	26.9	419	28.7
Hydrocephalus,	86	10.1	270	23.6	498	34.1

2. *Of the Organs of Respiration—Larynx, Windpipe, Air-tubes, Lungs, and Pleura.* We have included under *Pleurisy* "pleurisy fever," "pleuritis," and "inflammation of the pleura;" under *Phthisis*, "phthisis pulmonalis," and "consumption," also 29 cases in 1820 to 1830, and 18 in 1830

to 1839, returned as "decline;" under *Pneumonia*, "lung fever," "pulmonic fever," and "inflammation of the lungs;" under *Quinsy* "cynanche." In the different periods under consideration, 2460, 2802, and 3214 deaths, or 290.5, 244.8, and 220.5 per 1000, were caused by this class of diseases. This indicates a decrease of 70 per 1000 from the first to the last period. The following table will show the comparative prevalence of the principal diseases:

	1811—1820.		1821—1830.		1831—1839.	
	Number cases.	Ratio per 1000.	Number cases.	Ratio per 1000.	Number cases.	Ratio per 1000.
Pleurisy,	35	4.1	40	3.4	83	5.7
Phthisis,	1891	223.3	2054	179.	2066	141.7
Pneumonia,	436	51.4	580	50.5	937	64.2

The leading disease of this class, and indeed of all classes, is phthisis, or consumption. From these tables it appears to have decreased over one-third from the first to the last period. Entire reliance, however, should not be placed on this statement. There is so much indefiniteness in the application of the term, *consumption*, as well as many other terms in our bills, that it should be regarded only as an approximation to the truth. The more accurate diagnosis recently observed has probably given a different classification to many cases, from that assigned to them in the first period. Consumption is, however, a most formidable disease, not in Boston peculiarly, but in all cities and country towns. Sufficient facts are known to show, that from *one-fourth* to *one-seventh* of all the deaths in the Northern and Middle states, and perhaps throughout the whole Union, and the civilized world, are caused by consumption. This frightful mortality is to be arrested, if at all, by means of prevention, rather than the cure of the disease after it has once become seated. Were a competent individual to write a popular treatise explaining the various causes of the disease, and the proper precautionary measures to be taken to prevent its attacks, to be read and observed by the people, its mortality might be greatly reduced.

3. *Of the Organs of Circulation—Heart, Arteries, Veins, Lymphatics.*—Under *Disease* are embraced 9 cases of "dropsy of the heart," in 1836, and several cases of "angina pectoris" in different years. These diseases have increased, being 22, 81, and 191, or 2.5, 7. and 13.1 per 1000. Of the whole of this class 24, 90, and 200, or 2.9, 7.9, and 13.7 per 1000 occurred in the different periods. It is supposed as the science of medicine progresses, and the diagnosis of disease becomes more perfect, that diseases of the heart will be found to be the cause of more deaths than at present supposed.

4. *Of the Digestive Organs.—Mouth, Œsophagus, Stomach, &c.—Dyspepsia*, as a cause of death, appears less frequently in the two last periods than the first. Under *Gastritis* are included 3 cases of "gastric fever" in 1837; under *Disease* the cases of "aphthæ," "canker," "bowel complaints," and "piles." Canker has sometimes been considered synonymous with scarlatina or quinsy, and some cases should probably have been classed

among those diseases. The following statement will show the comparative prevalence of some of the principal diseases of this class:

	1811—1820.		1821—1830.		1831—1839.	
	Number cases.	Ratio per 1000.	Number cases.	Ratio per 1000.	Number cases.	Ratio per 1000.
Enteritis,	6	.7	162	14.1	320	21.9
Teething,	39	4.6	83	7.2	247	16.9
Worms,	21	2.5	26	2.2	51	3.5

Most of the other diseases specified have decreased, excepting those of the liver, and the other organs mentioned under the general head, and included under *Disease.* These have greatly increased. The whole number of cases were 231, 644, and 1107, or 27.3, 56.1, and 76, in the different periods.

5. *Of the Urinary Organs.—Kidneys, Ureters, Bladder, Urethra.*—Under *Stone* are included all who died of stone or gravel. In the first period there died of this disease 1 in 1411 of all diseases, in the second 1 in 546, and in the third 1 in 2082. Of all the diseases of this class 9, 30, and 22, or 1.1, 2.6, and 1.5 per 1000 occurred in the respective periods.

6. *Of the Organs of Generation.*—Under *Childbed* are included cases of "puerperal fever," 63, 121, and 175, or 7.4, 10.5, and 12. per 1000, in the respective periods, occurred by this disease; and 64, 132, and 192, or 7.6, 11.5, and 13.2 per 1000 of the whole deaths of this class.

7. *Of the Organs of Locomotion.*—Under *Rheumatism* cases of "rheumatic fever" 20, 40, and 40, have been caused by this disease; and by the whole class 26, 61, and 68, or 3.1, 5.3, and 4.7 per 1000 of the whole deaths.

8. *Of the Integumentary System.—Skin, Cellular Tissue.*—The deaths by this class were 3, 17, and 26, or .3, 1.5, and 1.8 per 1000 in the respective periods; *Ulcers* produced the most deaths of this class. "Scurvy" was the cause of 1 death in 1833, and 1 in 1835.

9. *Of Uncertain seat.*—The registered deaths by "*Infantile Diseases*" have been 1587, 883, and 867, or 187.4, 77.9, and 59.4 per 1000 in the respective periods. The "*Sudden*" *Deaths* have been 153, 83, and 70, or 18.0, 7.2, and 4.6 per 1000, showing apparently a large decrease in both of these causes of death. A better acquaintance with morbid anatomy, more accurate medical observation, and greater care in making the returns and records, have given more definite character to the causes of death, and assigned more of them to their proper place. Many cases, which would have been entered in the first period under these names, have in the last been entered under the other and more specific diseases of infancy, or under apoplexy, diseases of the heart, and other causes of "sudden" death. This has apparently decreased the number of cases of infantile diseases and sudden deaths, and increased the number of cases of other diseases in the tables. These facts are to be considered in estimating the comparative mortality of the different diseases. The registered deaths by *Intemperance* have increased, being 65, 257, and 310, or 7, 22.4 and 21.2 per 1000 in the respective periods.

We are inclined to think, however, that the number of deaths by intemperance has not increased so much as the above statement might indicate, but that a different name may have been sometimes given to this cause of death. The cause of the disease, and not the disease itself, may have been entered. An inspection of the table will show great inequalities in the number of entries under different years from other causes. This is especially the case with *Atrophy*, under which are included the entries by "debility," "decline," "cachexia," "emaciation," "marasmus," &c. Since the laws of sporadic diseases are such, as to produce about the same proportion of deaths in the same population, in specific periods of time, it is certain that these entries cannot be relied on as being accurate causes of death. The whole number by all this class of diseases was 2266, 1841, and 2163, or 267.6, 160.5, and 148.4 per 1000 of the whole deaths, showing considerable improvement in diagnosis, but showing also that much is yet to be done before the tables can be made as accurate as they should be.

10. *Old Age.*—The entries under the very indefinite term "*Old age*" were 379, 420, and 581, or 44.8, 36.6, and 39.9 per 1000 in the respective periods. It is worthy of consideration whether many of these cases might not have been entered under some specific disease.

11. *Deaths by Violence.*—The greatest number from any single cause of death under this class is by *Drowning*, the proportion of which has varied, but not increased. The next greatest is inserted under the very indefinite name of *Casualties*, including all who die from accidental causes. The next are by *Burns* and *Scalds*. The deaths by *Suicide* have stood 29, 50, and 95, or 3.4, 4.3, and 6.5 per 1000 in the respective periods, showing a small increase. *Murders* have decreased. The whole number by this class are 305, 499, and 611, or 36.0, 43.5, 41.9 per 1000 in the different periods, showing but little variation.

12. *Unknown Causes.*—The tables state the number of deaths, of which the causes are unknown, to have been 945, 1917, and 1251, or 111.6, 167.1, and 85.8 per 1000 in the different periods. This number has varied, and is now considerably decreased in proportion to the whole deaths, but it is still very much greater than it should be. Greater care on the part of the medical profession, and in making the records would reduce it.

From this view of the causes of death in Boston it appears that 1193, 2037, and 3622 cases, or 140.8, 177.7, and 248.6 per 1000 of all the deaths were from epidemic, endemic, and contagious diseases; and that 7275, 9433, and 10951 cases or 859.2, 822.3, and 751.4 per 1000 of all the deaths were from sporadic diseases. This shows an increase of the first, and a decrease of the second division of diseases, in the respective periods. If, as has been stated, the great criterion of health is the comparative prevalence of one or the other of these two great divisions of diseases, it follows that Boston is not now quite as healthy as it was twenty or thirty years ago. This fact, I think, may be inferred also from other investigations given in this article.

TABLE X, *showing the number of deaths in Boston*

			1811	1812	1813	1814	1815	1816	1817	1818	1819	1820	Total
Endemic, Epidemic, and Contagious Diseases.	1. *Fevers.*	Intermittent	-	-	-	-	-	-	-	1	-	1	2
		Synochus	12	4	6	6	2	10	12	7	42	9	110
		Spotted	-	-	-	-	-	-	-	-	-	1	1
		Typhus	63	23	42	80	51	23	59	119	112	51	623
		Yellow	-	-	-	-	-	10	-	1	1	1	13
		Total	75	27	48	86	53	43	71	128	155	63	749
	2. *Eruptive Fevers.*	Erysipelas	-	-	1	-	-	-	-	-	-	-	1
		Measles	-	-	-	-	21	6	-	1	-	-	28
		Scarlatina	1	-	-	1	-	3	1	1	12	10	29
		Small-Pox	2	-	-	-	4	-	-	-	-	-	6
		Thrush	-	-	-	-	-	-	-	-	-	-	-
		Total	3	-	1	1	25	9	1	2	12	10	64
	3. *Not Classified.*	Cholera	63	2	5	3	1	5	8	3	18	14	122
		Croup	1	1	1	2	6	4	11	5	9	3	43
		Dysentery	29	2	5	4	12	6	23	4	13	17	115
		Hydrophobia	-	-	-	1	-	-	-	-	-	-	1
		Hooping-Cough	14	-	1	5	2	9	19	1	3	24	78
		Influenza	-	-	-	-	1	-	-	-	2	2	5
		Syphilis	12	-	-	-	-	-	-	-	-	4	16
		Total	119	5	12	15	22	24	61	13	45	64	380
Sporadic Diseases.	1. *Of the Nervous System and Senses.* Brain, Spinal Marrow, Nerves, Eyes, Ears.	Apoplexy	13	15	15	3	3	18	17	9	6	10	109
		Convulsions	40	12	21	15	23	18	42	29	20	19	229
		Delirium Tremens	-	-	-	-	-	-	-	-	-	-	-
		Epilepsy	-	-	-	-	-	-	-	-	-	-	-
		Hydrocephalus	33	6	2	3	3	12	-	4	23	-	86
		Insanity	1	2	-	2	2	2	-	-	3	2	14
		Paralysis	12	6	6	9	11	8	6	6	-	16	80
		Phrenitis	-	1	-	1	3	1	6	2	1	7	22
		Tetanus	2	1	-	2	-	1	1	-	-	-	7
		Disease	-	-	1	1	2	1	-	-	-	-	5
		Total	101	43	45	36	47	61	72	50	53	54	562
	2. *Of the Organs of Respiration.* Larynx, Windpipe, Air tubes, Lungs, Pleura.	Asthma	-	2	1	-	-	-	-	-	-	-	3
		Bronchitis	-	-	-	-	-	-	-	-	-	-	-
		Hydrothorax	-	-	2	-	-	-	-	-	-	-	2
		Pleurisy	8	2	7	3	2	1	4	3	3	2	35
		Phthisis	221	190	193	153	190	180	231	138	175	220	1891
		Pneumonia	46	40	41	26	67	61	47	36	46	26	436
		Quinsy	15	17	8	10	7	16	6	4	4	6	93
		Disease	-	-	-	-	-	-	-	-	-	-	-
		Total	290	251	252	192	266	258	288	181	228	254	2460
	3. *Of the Organs of Circulation.* Heart, Arteries, Veins, Lymphatics.	Aneurism	1	-	-	-	-	-	-	1	-	-	2
		Pericarditis	-	-	-	-	-	-	-	-	-	-	-
		Disease	1	1	1	-	-	1	2	5	3	8	22
		Total	2	1	1	-	-	1	2	6	3	8	24
	4. *Of the Digestive Organs.* Mouth, Œsophagus, Stomach, Small Intestines, Colon, Rectum, Pancreas, Liver, Gall-Bladder, Spleen.	Ascites	-	-	2	-	-	-	-	-	-	-	2
		Colic	2	2	-	-	-	-	-	-	-	1	5
		Constipation	-	-	-	-	-	-	-	-	-	-	-
		Dyspepsia	15	2	16	-	1	18	12	12	2	11	89
		Enteritis	1	-	-	-	-	-	-	-	-	5	6
		Gastritis	1	-	-	-	-	-	-	-	-	-	1
		Hernia	3	-	-	-	-	-	-	1		3	8
		Peritonitis	-	-	-	-	-	-	-	-	-	-	-
		Tabes Mesenterica	-	1	-	-	2	-	-	-	-	-	3
		Teething	15	10	2	1	-	1	2	-	7	3	39
		Worms	11	-	-	-	-	-	-	-	7	3	21
		Disease		1	-	-	-	-	-	-	-	-	1
		Disease of the Pancreas											
		Hepatitis	-	-	-	3	3	2	-	5	6	6	25
		Jaundice	10	4	5	2	1	3	3	-	1	1	30
		Disease of the Liver	-	-	-	-	-	1	-	-	-	-	1
		Disease of the Spleen	-	-	-	-	-	-	-	-	-	-	-
		Total	58	20	25	6	7	25	15	18	24	33	231

by disease in each year, from 1811 *to* 1839.

1821	1822	1823	1824	1825	1826	1827	1828	1829	1830	Total	1831	1832	1833	1834	1835	1836	1837	1838	1839	Total
-	-	-	-	1	-	-	2	1	1	5	2	1	-	-	4	2	3	-	1	13
18	10	-	19	12	22	9	21	8	14	133	15	5	20	8	23	13	-	3	9	96
-	-	-	1	1	-	-	-	-	-	2	1	-	-	-	-	-	-	-	-	1
45	34	43	62	54	50	46	46	45	33	458	43	60	73	70	101	68	93	43	60	611
-	2	1	1	-	1	-	-	1	-	6	-	-	-	-	-	-	-	-	-	-
63	46	44	83	68	73	55	69	55	48	604	61	66	93	78	128	83	96	46	70	721
-	-	-	-	1	-	8	3	-	-	12	2	4	4	12	9	3	6	17	8	65
149	3	-	2	77	10	-	-	78	13	332	2	70	2	1	188	31	23	20	3	340
4	1	1	-	4	16	8	3	4	5	46	84	200	90	39	73	31	50	106	222	895
-	-	-	1	1	-	3	2	-	1	8	4	2	-	4	7	6	13	3	60	99
-	-	-	1	-	-	-	1	1	1	4	-	-	-	-	3	-	-	-	-	3
153	4	1	4	83	26	19	9	83	20	402	92	276	96	56	280	71	92	146	293	1402
15	5	15	18	24	17	8	26	1	20	149	21	93	20	30	30	30	80	61	42	407
11	10	13	30	30	24	25	25	35	42	245	53	40	43	43	32	31	44	44	46	376
73	40	37	69	60	48	27	31	21	23	429	29	24	41	48	45	38	45	65	37	372
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
26	5	17	13	27	23	6	40	11	16	184	26	22	28	38	44	17	19	28	34	256
-	-	-	-	7	-	-	-	-	-	7	22	24	1	4	2	2	15	2	-	72
1	2	1	3	3	1	1	3	1	1	17	-	4	-	3	2	-	4	2	1	16
126	62	83	133	151	113	67	125	69	102	1031	151	207	133	166	155	118	207	202	162	1499
7	6	11	9	12	10	10	18	12	12	107	11	15	19	9	19	19	31	19	20	162
22	11	22	36	48	53	29	32	28	28	309	34	41	39	50	51	50	52	60	42	419
5	.	7	4	7	5	1	7	.	2	38	6	10	3	1	4	5	11	10	8	58
1	2	1	2	.	1	3	.	2	.	12	.	1	1	1	2	.	.	2	2	9
6	1	11	33	38	29	24	38	42	48	270	51	44	52	53	48	68	59	67	56	498
4	2	.	2	.	1	5	1	3	4	22	1	.	.	1	10	4	.	.	3	19
22	10	5	12	14	9	6	10	11	14	113	11	19	12	13	19	11	13	7	14	119
15	17	16	.	3	3	7	5	7	.	73	.	.	11	10	.	5	23	25	11	85
.	1	.	2	.	1	.	1	1	.	6	.	1	.	1	1	2	.	.	1	6
.	1	1	.	1	6	6	.	7	8	30	15	19	7	10	8	15	31	23	12	140
82	51	74	100	123	118	91	112	113	116	980	129	180	144	149	162	179	220	213	160	1515
1	2	1	2	2	1	2	1	.	1	13	2	.	3	4	.	4	2	2	8	25
.	.	.	.	.	.	.	.	.	.	.	1	1	.	1	.	-	1	1	1	6
2	.	5	14	3	9	6	1	4	3	47	4	6	7	1	.	6	9	5	3	41
.	5	4	7	6	7	3	2	4	2	40	4	3	8	11	13	14	18	10	2	83
216	166	184	246	220	231	178	217	203	193	2054	203	246	240	246	208	233	212	256	222	2066
31	41	38	77	67	41	38	89	90	68	580	97	106	77	90	141	99	114	113	100	937
5	7	5	11	.	5	2	1	3	4	43	5	6	2	3	6	5	.	.	3	30
.	.	.	15	.	2	.	2	6	.	25	.	.	3	5	1	3	8	2	4	26
255	221	237	372	298	296	229	313	310	271	2802	316	368	340	361	369	364	364	389	343	3214
.	.	1	.	.	.	.	.	.	.	1	.	.	.	.	.	1	3	.	.	4
.	.	.	7	.	.	1	.	.	.	8	.	.	.	.	.	.	2	3	.	5
5	3	8	4	10	14	7	7	10	13	81	15	13	16	25	14	23	27	28	30	191
5	3	9	11	10	14	8	7	10	13	90	15	13	16	25	14	24	32	31	30	200
.	3	1	2	4	4	2	3	3	2	24	4	4	4	1	.	.	10	2	5	30
.	.	.	.	3	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.
3	.	3	.	7	1	1	.	.	.	15	.	1	.	2	3	3	1	.	1	11
10	5	15	13	15	24	12	33	21	14	162	18	31	23	38	30	35	41	54	50	320
.	.	.	4	.	1	.	2	.	2	9	.	.	1	.	.	.	3	6	.	10
.	1	2	2	2	2	.	1	1	1	12	1	.	.	.	.	.	1	3	.	5
.	.	.	1	3	.	.	.	.	.	4	.	.	.	.	.	.	1	.	.	1
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	.	2	10	15	8	23	.	13	12	83	10	21	30	36	24	45	22	30	29	247
.	4	3	3	3	4	4	1	3	1	26	3	7	7	5	6	7	4	3	9	51
1	.	.	22	41	25	39	20	18	16	182	28	38	31	29	44	90	7	10	33	310
.	.	.	.	16	1	.	.	1	.	18	.	.	.	.	.	.	.	.	.	.
3	7	3	.	10	5	3	2	1	.	34	1	3	5	2	1	1	1	4	3	21
5	.	6	.	.	11	7	10	14	17	70	11	9	12	8	25	14	8	5	9	101
1	.	.	.	.	.	.	.	1	.	2	1	.	.	.	.	.	.	.	.	.
23	20	35	57	119	86	91	72	76	65	644	77	114	113	121	133	195	99	117	139	1107

TABLE X, *showing the number of deaths in Boston*

			1811	1812	1813	1814	1815	1816	1817	1818	1819	1820	Total
Sporadic Diseases.	5. *Of the Urinary Organs.* Kidneys, Ureters, Bladder, Urethra.	Diabetes	-	-	-	-	-	-	-	-	-	-	-
		Cystisis	-	-	-	-	-	-	-	-	-	-	-
		Nephritis	-	1	1	-	-	-	-	-	-	-	2
		Stone	-	-	-	-	-	-	3	1	-	2	6
		Disease	-	-	-	-	-	-	-	1	-	-	1
		Total	.	1	1	.	.	.	3	2	.	2	9
	6. *Of the Organs of Generation.*	Childbed	14	5	5	6	4	12	3	4	2	8	63
		Diseases	-	-	-	-	-	-	-	-	-	1	1
		Total	14	5	5	6	4	12	3	4	2	9	64
	7. *Of the Organs of Locomotion.* Joints, Bones, Ligaments, Tendons, Muscles.	Rheumatism	1	-	-	-	-	3	7	-	6	3	20
		Disease	2	-	-	1	1	1	-	-	-	1	6
		Total	3	-	-	1	1	4	7	-	6	4	26
	8. *Of the Integumentary System.* Skin, Cellular Tissue.	Carbuncle	-	-	-	-	-	-	-	-	-	-	-
		Fistula	-	-	-	-	-	-	-	-	-	-	-
		Ulcer	-	-	-	-	-	-	-	1	-	-	1
		Disease	-	-	-	-	-	1	-	-	1	-	2
		Total	-	-	-	-	-	1	-	1	1	-	3
	9. *Of uncertain seat.*	Abscess	2	-	1	-	-	1	3	5	-	1	13
		Atrophy	20	-	.	.	1	37	.	.	.	.	58
		Cancer	5	.	1	.	6	2	11	3	3	1	32
		Debility	28	.	.	1	.	.	.	2	9	4	44
		Dropsy	21	16	17	17	14	12	36	23	23	14	193
		Gout	3	.	1	2	1	.	.	1	.	4	12
		Hæmorrhage	4	1	1	.	.	1	3	4	5	4	23
		Infantile Diseases	.	133	206	208	222	195	157	156	147	163	1587
		Inflammation	.	.	.	.	.	.	.	.	.	.	.
		Intemperance	2	12	.	.	.	3	3	3	11	31	65
		Malformation	-	.	.	.	.	.	.	.	.	.	.
		Mortification	11	4	7	8	6	13	9	4	.	7	69
		Scrofula	.	.	.	1	1	.	1	2	1	8	14
		Sudden Deaths	25	24	11	14	11	21	13	12	13	9	153
		Tumor	.	.	.	.	.	.	.	2	.	.	3
		Total	121	190	245	251	262	286	236	217	212	246	2366
	10. *Of Old Age.*	Old Age	26	35	48	39	44	37	50	32	29	39	379
	11. *Deaths by Violence.*	Burns and Scalds	6	2	2	5	5	5	9	2	3	3	42
		Casualties	16	6	9	3	4	5	7	14	8	12	84
		Drinking Cold Water	2	.	.	.	.	.	.	2	2	1	7
		Drowned	13	10	15	10	12	12	13	12	13	9	119
		Fracture	.	1	.	.	.	.	.	.	.	1	2
		Frozen	.	.	.	.	.	.	.	.	.	.	.
		Hanged	.	.	.	.	.	.	1	.	.	4	5
		Murdered	.	.	.	.	1	2	.	.	1	2	6
		Poisoned	.	.	1	.	1	.	.	.	1	3	6
		Suffocation	.	3	1	.	.	.	.	.	1	.	5
		Suicide	1	.	.	1	6	4	3	4	4	6	29
		Total	38	22	28	19	29	28	33	34	33	41	305
		Unknown Causes	43	32	39	43	71	84	32	237	178	187	945

by disease in each year, from 1811 *to* 1839.—*continued.*

1821	1822	1823	1824	1825	1826	1827	1828	1829	1830	Total	1831	1832	1833	1834	1835	1836	1837	1838	1839	Total
.	.	.	.	.	.	1	1	.	1	3	.	.	.	1	.	1	2	1	.	5
.	.	.	.	1	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
1	3	2	2	2	4	2	1	2	2	21	.	1	.	1	1	3	.	.	1	7
.	.	3	1	.	.	.	.	.	1	5	.	2	1	3	.	1	2	1		10
1	3	5	3	3	4	3	2	2	4	30		3	1	5	1	5	4	2	1	22
7	9	5	13	17	12	11	14	17	16	121	14	14	17	14	29	23	19	27	18	175
2	.	.	4	.	.	1	2	2	.	11	.	1	.	.	1	2	5	7	1	17
9	9	5	17	17	12	12	16	19	16	132	14	15	17	14	30	25	24	34	19	192
6	2	2	9	6	4	4	2	3	2	40	4	3	4	5	4	7	3	6	4	40
2	1	2	3	2	2	1	1	3	4	21	2	3	5	2	3	4	.	5	4	28
8	3	4	12	8	6	5	3	6	6	61	6	6	9	7	7	11	3	11	8	68
.	.	1	1	.	.	.	.	1	.	3	1	.	.	.	.	.	.	.	.	1
.	.	.	.	.	2	1	3	.	1	7	.	.	.	.	.	.	.	.	.	
.	.	.	.	.	.	1	.	1	.	2	3	2	1	1	9	1	3	.	.	20
.	1	.	.	1	3	.	.	.	.	5	1	1	.	1	2	.	.	.	.	5
.	1	1	1	1	5	2	3	2	1	17	5	3	1	2	11	1	3	.	.	26
3	5	4	9	2	6	2	2	1	3	37	4	8	4	4	.	3	5	5	5	38
1	1	9	13	12	.	.	.	.	.	36	.	.	2	10	31	23	32	54	34	186
3	12	3	9	7	6	4	5	3	6	58	5	5	12	15	9	6	14	12	8	86
8	4	6	16	.	18	6	6	10	8	82	20	15	12	13	29	11	1	5	11	117
32	43	18	12	28	32	25	20	12	15	237	28	38	24	27	38	35	42	23	28	283
.	1	2	2	1	1	.	.	1	.	8	.	.	1	1	.	1	.	.	.	3
1	2	.	.	.	.	.	.	.	7	10	.	.	.	.	.	.	3	4	5	12
153	244	184	32	44	40	35	55	55	41	883	56	70	100	95	111	176	59	112	88	867
.	.	.	3	.	3	4	4	11	1	26	3	3	.	1	2	1	4	20	1	35
31	25	10	22	23	38	25	34	30	19	257	38	44	40	39	37	41	17	24	30	310
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	2
8	8	4	12	8	9	9	7	8	4	77	9	9	4	9	10	6	11	3	.	61
5	2	4	3	4	1	2	5	4	5	35	2	3	5	8	13	9	13	5	7	65
6	9	5	7	35	.	3	2	7	9	83	5	9	5	4	12	12	.	13	10	70
1	.	.	2	1	2	3	.	.	3	12	5	2	2	2	7	1	1	3	5	28
252	356	249	142	165	156	118	140	142	121	1841	175	206	211	228	290	325	202	284	233	2163
31	36	39	33	38	40	37	54	65	47	420	67	62	57	54	72	82	69	65	53	581
14	4	3	15	5	13	8	0	5	10	86	16	10	11	5	11	10	12	20	15	110
18	17	24	2	11	14	14	14	12	8	134	14	18	19	22	25	32	14	22	16	182
.	.	.	2	6	.	.	.	.	.	10	1	.	.	1	1	.	.	3	.	6
19	21	16	18	21	22	21	16	19	15	188	15	22	10	25	16	17	23	19	20	177
.	.	2	.	.	.	.	2	1	.	5	1	.	2	.	.	1	.	1	2	7
.	.	.	.	1	1	.	.	.	2	4	1	.	.	1	.	.	.	.	.	2
.	.	.	.	.	1	.	.	.	.	1	.	.	.	.	7	2	.	.	.	9
1	6	.	.	1	.	.	.	.	.	8	.	.	.	1	.	3	.	.	1	5
.	.	.	.	1	1	1	2	1	.	6	1	.	.	3	1	.	.	4	1	10
1	2	.	1	1	.	1	.	1	.	7	2	2	2	.	.	2	.	.	.	8
2	5	3	5	4	5	4	9	5	8	50	12	8	14	11	9	13	10	8	1	95
55	55	48	43	51	57	49	54	44	43	499	63	60	68	69	70	80	59	77	75	611
241	218	211	197	227	161	153	180	160	152	1917	182	126	85	105	88	85	269	182	129	1251

TABLE XI, *showing the number of deaths, and the ratio per* 1000 *by each class of diseases, in the three periods*, 1811-1820, 1821-1830, *and* 1831-1839.

Diseases.	1811-1820.		1821-1830.		1831-1839.	
	Number of d'ths.	Ratio per 1000.	Number of d'ths.	Ratio per 1000.	Number of d'ths.	Ratio per 1000.
Fevers, - - - - - -	749	88.4	604	52.7	721	49.5
Eruptive Fevers, - - - - -	64	7.5	402	35.1	1402	96.2
Not classified, - - - - -	380	44.9	1031	89.9	1499	102.9
Total Epidemic, Endemic, &c. diseases,	1193	140.8	2037	177.7	3622	248.6
Nervous system, - - - - -	562	66.4	980	85.4	1515	104.0
Organs of Respiration, - - - -	2460	290.5	2802	244.3	3214	220.5
Organs of Circulation, - - - -	25	2.9	90	7.9	200	13.7
Digestive Organs, - - - - -	231	27.3	644	56.1	1107	76.0
Urinary Organs, - - - - -	9	1.1	30	2.6	22	1.5
Organs of Generation, - - - -	64	7.6	132	11.5	192	13.2
Organs of Locomotion, - - - -	26	3.1	61	5.3	68	4.7
Integumentary System, - - -	3	.3	17	1.5	26	1.8
Uncertain seat, - - - - - -	2266	267.6	1841	160.5	2163	148.4
Old Age, - - - - - - -	379	44.8	420	36.6	581	39.9
Deaths by violence, - - - - -	305	36.0	499	43.5	611	41.9
Unknown causes, - - - - -	945	111.6	1917	167.1	1251	85.8
Total Sporadic diseases, - - - -	7275	859.2	9433	822.3	10951	751.4
General Total, - - - - -	8468	1000.0	11470	1000.0	14573	1000.0

This article has already extended so far that the author is induced to omit all comparisons between Boston and other places, in regard to the prevalence of particular diseases, or the general mortality. He has a series of the bills of mortality of the principal cities in the United States, and a great mass of similar facts from Europe, which he reserves for a future consideration.

Since the foregoing article was in the hands of the printer the population of Boston, and the bill of mortality for 1840 have been obtained; and it is deemed expedient to annex the following abstract of these documents.

A census was taken by authority of the state, on the first day of May, for the purpose of an apportionment of the representatives in the legislature, which excluded some classes of the inhabitants. According to the census of the United States the whole population was 93,470, whites 91,188, or 97.55 per cent., and coloured 2321, or 2.55 per cent. Of these 10,805 were returned as engaged in navigation, a large portion of whom, being constantly absent, should not be embraced in the comparative estimates of the deaths to the living. The white population, among whom the recorded deaths occur, may be estimated at 84,311, and the coloured at 2321. The deaths in 1840, exclusive of the still born, were 1841 whites, or 1 in 47, or 2.10 per cent. and 64 coloured, or 1 in 36, or 2.75 per cent. being about the average for the previous years. The whites were distributed according to ages, as in the following table. The male deaths were 951, and the female 890. There were 45 more males than females died under five years of age.

Age.	Population in 1840.				Deaths in 1840.				
	Number in each age.	Number surviving each age.	Proport'n in each age.	Proport'n surviving each age.	Number in each age.	Number surviving each age.	Proport'n in each age.	Proport'n surviving each age	Proport'n to living each age.
Under 5	11393	84.311	13.51	100.	784	1777	44.12	100.00	6.88
5 to 10	8725	79.918	10.35	86.49	70	993	3.94	55.88	.80
10 to 20	15809	64.193	18.75	76.14	100	923	5.63	51.94	.63
20 to 30	22337	48.384	26.49	57.39	200	823	11.26	46.31	.99
30 to 40	13666	26.047	16.21	30.90	226	623	12.72	35.05	1.65
40 to 50	6546	12.381	7.77	14.69	133	597	7.48	22.33	2.03
50 to 60	3404	5.835	4.04	6 92	110	464	6.19	14.85	3.23
60 to 70	1561	2.431	1.85	2.88	69	154	3.88	8.66	4.42
70 to 80	641	.870	.76	1.03	47	85	2.64	4.78	7.33
80 to 90	202	.229	.24	.27	33	38	1.86	2.14	15.95
Over 90	27	.027	.03	.03	5	5	.28	.28	18.55
	84311		100.00		1777		100.00		2.10

Diseases.—Of 533 deaths caused by endemic, epidemic, and contagious diseases, 97 were from fevers, 202 from eruptive fevers, and 234 from others not classified. Of these 89 were by typhus fever, 76 by scarlatina, 116 by small pox, 55 by cholera, 58 by dysentery, and 70 by whooping cough, showing, by comparing it with Table X, an increased prevalence of some diseases, and a decrease of others.

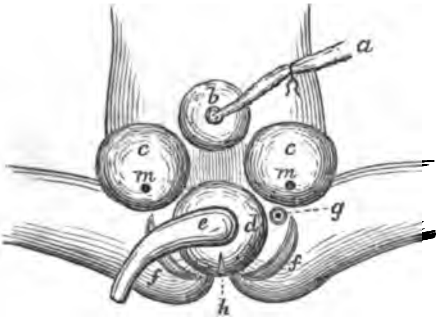
Of the 1308 deaths caused by sporadic diseases, 200 were by diseases of the nervous system, 402 of the organs of respiration, 18 of the organs of circulation, 126 of the organs of digestion, 1 of the urinary organs, 24 of the organs of generation, 8 of the organs of locomotion, 5 of the integumentary system, 295 of uncertain seat, 64 of old age, 79 by violence, and 86 by unknown causes. The stillborn were 131. This shows no peculiar feature in the prevalence of these diseases, when compared with the prevalence of the same diseases for the previous nine years.

Art. VII. *Case of Malformation.* By E. Mitchener, M. D., of New Garden.

Mrs. E., the wife of J. P., was delivered of her second child on the night of the 12th of fifth month (May) last. The child was small, but appeared to have arrived at its full time. It was malformed and imperfect in a great degree. The left foot had only three toes; the greater of which was separated from the other two by a fissure, which extended to the tarsal extremity of the metatarsal bone. Owing to deformity of the tarsus, its superior part was closely applied to the anterior face of the tibia. But the principal deviation from a normal state—the wildest freak of nature—existed in the pelvic and genital organs.

The following description and rough sketch were made on the next morning after its birth, and the notes of its progress continued until death:—

A depressed circular tumour, *b*, surrounds the insertion of the *funis umbilicalis* for the distance of three-fourths of an inch, filled with the gelatiform substance of the cord, and covered by its transparent investing tunics. Below and on each side of the umbilicus, nearly in the situation of the abdominal rings, there are two other very prominent hemispherical tumours *c, c*, of about an inch and a half in diameter, soft, elastic, and inflated, and which become more tense when the child cries. Externally, they are of a bright florid colour, and have a villose appearance, very much resembling the lining of the rectum when prolapsed. Near their lower edges are two apparent orifices, *m, m*, which, however, will not admit a probe. These may prove to be the terminations of the ureters.



Centrally between and below the parts just described, and occupying the pubic region, is another broader tumour, *d*, less prominent than the last, but becoming much more distended when the child cries, and which is surmounted by a long tubular pendulous body, *e*, of a conical form, and strongly bent downwards near the extremity. It is about three and a half inches long, one inch in diameter at base, and half an inch at the end. When the child reposes, it is rather soft and flaccid; but crying or other exertion causes it to become swollen or inflated, and it then rises up in the position of an erect penis, still, however, retaining its curvature. This body, as well as the tumour which supports it, is made up of the same florid villose material which I have already described. In a state of collapse, the surface becomes transversely rugose. The extremity is pervious, and, soon after birth, gave exit to a copious discharge of meconium. Inflation is generally followed by an evacuation of flatus or of fæcal matter. There seems to be little doubt that this is the rectum misplaced without the body.

Exterior to and below the tumour, *d*, on either side, and separated from it by deep fissures, are found the *labia pudendi, f, f*, with the *nymphæ* on their inner facets. These labia are separated more than an inch at their lower extremities, and diverge still wider above.

Within the labium of the left side, and rather above it, is to be seen a small orifice, *g*, with a hard projecting margin, and filled with a thick tenacious mucus. This bears a striking resemblance to the infantile *os uteri.*

On raising the inferior edge of the tumour, *d*, there is a vertical fissure brought into view between the nates at *h*, which is lined with mucous membrane, and ends in a *cul-de-sac* at the depth of half an inch. This is doubtless the result of an effort to form a *vagina* in its natural situation.

The *pubic bones* appear to be entirely wanting, and, in consequence, the *illiæ* are so drawn asunder as to give the posterior aspect of the pelvis a peculiar flattened appearance.

May 14*th.*—The child appears tolerably comfortable, but does not suck or take nourishment of any kind. The umbilical tumour is very much shrunk and circumscribed by a red line; *c*, *c*, have also contracted, and do not fill with flatus when the child cries. There appears to be a slight *stillicidium of urine*, but its source is not ascertained.

15*th.*—The little sufferer is more feeble and suffers much. The whole morbid mass is reduced in size; the denuded parts incline to bleed when touched, and there are small ulcers forming.

17*th.*—My friend Henry Gibbons, M. D., of Wilmington, Del., saw the child with me. Its sufferings are so great as to demand anodynes to mitigate them. General appearance not much changed.

19*th.*—The funicular tumour is dry and black, and partly separated. Some of the ulcerated parts have cicatrized. The local appearances are improved, but the general strength is sinking, and the child takes no food.

29*th.*—The little patient continued to endure great suffering without other material changes, until this afternoon, when it died, being the seventeenth day from the time of its birth.

30*th.*—Eighteen hours after death I made a hasty examination of the body, assisted by my friend and pupil, Thomas Hobson, Jun.

Body greatly emaciated. The diseased parts, owing partly to the feeble state of the circulation before death and partly to their denuded condition are shrunken, black, and almost dry, but not gangrenous.

A transverse incision was carried across the epigastrium, and thence downwards on each side along the crests of the illiæ. On raising the flap so formed, the subjacent viscera presented marks of considerable peritoneal inflammation, adhesions and effusions of lymph. The *liver* was much enlarged, particularly the middle lobe, which was produced downwards, in form of an acute triangle as far as the pubes. The *gall-bladder* was on a line with the superior iliac crests. The sigmoid flexure of the *colon* did not exist. Instead of dipping down into the left iliac region it took a more direct course down to the tumour, *d*, which it entered and from which it was easily withdrawn, at the same time inverting the tubular body, *e*, and proving it to be an inversion and prolapsus of the *rectum.*

The *left kidney* was very large. Its *pelvis* and the dilated *ureter* contained about an ounce of turbid flocculent urine. A probe passed readily along the ureter, following the curve of the sacrum to near the *os coccygis*, where it terminated. The *right kidney* appeared to be normal; and the *ureter*, which would not carry a probe, was traced to the interior of the corresponding tumour, *c*.

On the inner surface of the flap, and corresponding with the tumours, *c*, *c*, were two cone-shaped bodies, which projected more than an inch into the abdominal cavity. At the base they were of a firm texture, but soft and fimbriated towards the extremity. These proved to be *two uteri*, and were inserted into the interior of *c*, *c*, as their proper *vaginæ*. The orifice at *m* on the right side was common to the *ureter* and *vagina* belonging to it; *m* on the left was found to be impervious, and the entrance to the vaginal tumour, *c*, was through *g*. The mouths and necks of the uteri were normal, but the bodies were membranous and the *Fallopian tubes* could not be distinctly traced. No *ovaria* were observed but they might have been easily overlooked.

Remarks.—The appearance at *m* on the left was doubtless an attempt to form an outlet for the *kidney and uterus* similar to the one on the right, but those emunctories had already taken a different direction. The fissure at *h* seems also to have been an attempt to form a *vagina*, and, in accordance with the plan, we find the *left ureter* seeking an outlet in that vicinity. The entrance of the *left vagina* is brought somewhat *in situ* between the *labia* with an accompanying indication of a *urethra* above it. The *ureter* indeed wanders far from its associate, the *uterus*, but, as we have seen, it goes to form another association quite as natural with the imperfect *vagina* at *h*, and its embracing *labia and nymphæ*. On the right we also find an unfinished *uterus and vagina*, and, in the absence of the urinary *bladder*, the *ureter* bears them company in their exile.

When nature is once turned out of her ordinary course, it is both curious and instructive to watch the efforts which she makes to fulfil her original design.

MONOGRAPH.

Art. VIII.—*On the Diseases of the Intestines.* By N. Chapman, M.D. Professor of the Institutes and Practice of Physic, and Clinical Practice in the University of Pennsylvania.

That portion of the digestive tube, denominated the intestinal, is scarcely of less importance than the stomach itself, exercising the same sort of influence over the general organization or economy, and from its vast extent, and intimate connections, is exposed to numerous and infinitely diversified morbid affections of the deepest interest, in whatever light they may be surveyed. Of these, the first in the order of examination is:

Enteritis, or Inflammation of the Bowels.—In reciting its history, we have to encounter the same embarrassment experienced in regard to gastritis,—it being also, a simple phlegmasia or local affection, or complicated with general febrile disturbance. My design is to contemplate it as much as possible, in the former light, avoiding what has been previously said of it under the head of fevers, and especially in relation to the doctrine of *dothinenteritis*, on which I have already delivered my sentiments, and am now to pass over the subject with a rapid sketch only, since I shall have to review it again, and minutely, in treating of diarrhœa, dysentery, colic, cholera, and other modifications of essentially the same pathological condition. Till of late, it has been customary with writers in delineating this disease, to view it as one common affection of the whole intestinal canal, without any reference to the portions of it concerned, or the tissue in which it may be more immediately seated. These are circumstances, however, which vary the case materially, and as involving some practical results, should, independently of any nicety of pathological distinction, claim attention. The fact however is, that in attacks so violent as to constitute what is usually deemed acute enteritis, it mostly happens that the inflammation is not restricted to any one tissue. Commencing as it generally does in the mucous, or should it conversely in the serous, which is much less common, it involves in its progress ordinarily, the other coats, so as to form a case embracing the whole. An exclusive mucous phlogosis is exhibited, perhaps, only in mild diarrhœa, and even here, it is among the rarest of events. That the contrary has been maintained, I am aware, and indeed, to such extravagance is the notion now carried by some, as altogether to disregard every other than those of the mucous membrane, in the discussion of the affections of the bowels. But surely this is wrong, the evidence of symptoms, and the phenomena on dissection, concurring to establish an opposite conclusion, or the very general involvement of the whole of the tissues in a greater or less degree, primarily or ultimately.

The course I mean to pursue is, first, to describe enteritis generally, and then to notice it in the subdivisions, and particular characters it receives from the considerations to which I have alluded. No disease, perhaps, exhibits a greater variety of aspects than enteritis, as well for the reasons just mentioned, as from the gradations of severity, and extent of complications to which it is liable. But taking the average of cases, there is with preclusive chilliness, or cold sensations, sooner or later followed by some febrile reaction, clammy mouth, furred tongue, internal heat, pain occasionally dull or gravative, though oftener acute, lancinating, or spasmodic, especially around the umbilicus, usually increased by pressure, attended by nausea or vomitings, purgings or constipation, according to the location of the phlogosis, and occasionally by some embarrassment of urination, much thirst, or sometimes none at all, the circulation rather depressed, or full and slow, or hard corded, and accelerated, with strong pulsatory sensations in the aorta;—the skin hot and dry, of the belly, while on the extremities it may be the reverse;—extreme anxiety and restlessness, and not unfrequently a tendency to delirium. These symptoms, or some of them at least, in diverse combinations, are progressively increased, and at the same time, there is in some instances, more development of certain secondary affections, among which are those of the brain and liver, or other of the collatitious organs. The case, however, having passed over the stage of active phlogosis, we shall perceive a gradual decay of vital energy, marked by a feeble or scarcely perceptible pulse, collapsed surface, dewy perspiration, low, muttering delirium, haggard or contracted countenance, relaxed muscles, meteorism or distension of the abdomen, singultus, puking or purging of albuminous or mucous matter, or of dark, thin, and often of a granular or flocculose fluid, with hurried and laborious respiration. The tongue, at this period, may be either heavily loaded at the root and centre, with florid tip and edges, or more generally red and dry, or even chapped, in which respect there is considerable difference.

As described, such is ordinary enteritis. But on some occasions, where reaction does not take place, we have, throughout its career, the manifestations of extreme prostration of the forces of life. Not to anticipate remarks reserved for the future, it may now suffice to state, that while in some instances it resembles very much the advanced stages of the inflammatory form of the disease, it more frequently imitates the typhoid conditions of dysentery.

Cold, variously applied, is the common cause of this disease, and next to it perhaps, are lodgements of irritating ingesta, or obstinate constipation, though it may arise from many other causes, and, indeed, all those enumerated as exciting gastritis.

Efforts recently have been employed to indicate the differences in the inflammation of the bowels, as influenced by the circumstances previously mentioned, and though in many instances the criteria will fail, they ought to be known from their sometimes serving the purpose. The upper portion of the tube being phlogosed, there is ordinarily constipation, and the contrary as regards the lower. Not a little, however, depends on the tissue engaged. Thus, where the muscular coat is exclusively so, in any part of the tube, constriction of the bowels, with retention of their contents is the consequence, and the reverse, when the mucous surface is only implicated. But we have further distinctions.

Duodenitis is designated by most of the symptoms of inflamed stomach, vomiting, epigastric oppression, puffiness, and occasionally by an icterose aspect, as we see more particularly in what are termed bilious autumnal, and yellow fevers, where the stomach and duodenum are much more affected than the liver, or indeed any other organ or structure. Even confirmed jaundice, a fact which I claim first to have published, is sometimes connected with this pathological condition of the upper portion of the digestive tube, though oftener with the chronic forms of it.

It is confessed that we have no signs by which *jejunitis* is distinguishable, owing probably, to the comparative exemption of this intestine from inflammation, and when attacked, it is in combination, and not separately.

The phenomena supposed to be among the most characteristic of *ileitis*, are the absence of acute pain, and less tenderness, and without vomiting, than in gastro-duodenitis. But this is not universally true, these symptoms, in colic especially, being in the highest degree of exasperation, and are by no means seldom met with. Greater confidence, I think, is to be placed on the position of the pain, and sensibility on pressure, which are around the umbilicus, descending however much lower, or into the hypogastrium, with difficulty of urination, very early meteorism, and above all, the absence of those circumstances denoting the lesions of the superior and inferior sections of the bowels.

Excepting the location of the pain in the right iliac and inguinal regions, attended by some tumefaction at these points, I know of nothing very expressive of an inflamed cæcum.

Characteristic mainly of *colitis*, is a diffused pain and tenderness over the abdomen, though particularly in the direction of the arch of the colon, a sense of weight in the pelvis, frequent purgings of vitiated matter, indicative of defective fecation, resembling the discharges in diarrhœa or dysentery. Tormina and tenesmus, with sometimes hæmorrhoidal irritation, are probably the least equivocal signs of *rectitis*.

Enteritis of the several sections of the tube is thus represented. But I must repeat, that in its distributions, it is hard of recognition, and probably does not admit of being clearly designated with any sort of uniformity. But there are some claiming to do it, who if they really possess the power, I can only say, that they have a degree of perspicacity, which I have never witnessed in others, or can possibly arrogate to myself.

It was the habit of the late Professor Shippen, of facetious memory, when demonstrating the small intestines especially, having pointed out their ordinary divisions, to say, that these were arbitrary, and that, pulling at the gut, when we got tired calling it duodenum, we might call it jejunum, and then ileum. From the want of definite diagnostics; I apprehend that we are compelled to pursue pretty much the same course in our pathological consideration of this structure.

The phenomena of enteritis are modified by other circumstances. As in gastritis, the mucous and cellular membranes being alone affected, the pulse is comparatively slow and soft, there is scarcely any pain, the secretions are augmented, and variously changed, with a heavily coated tongue, while an affection of the muscular fibres is denoted by the predominance of spasm—and of the peritoneal covering, by lancinating pain, attended by a more wide spread tenderness, whitish furred tongue, and in each of the latter instances, by a small, corded, accelerated pulse.

Nor, perhaps, is it always easy to distinguish enteritis from the inflammation of the stomach and some other parts. The analogy between it, when seated in the upper intestine, and gastritis, is indeed so close, that many of the recent writers confound them under the title of gastro-duodenitis. But, though usually united, they may certainly have a distinct existence. By Andral it has indeed been actually demonstrated, and, in this state of separation, are sometimes susceptible of recognition, by a careful collation and comparison of their respective symptoms.

Nearly the same may be said of pancretis and hepatitis, each of which may so simulate the phlogosis of the small intestines especially, as to demand a similar scrutiny of their features. Less perplexing is the discrimination of diarrhœa, dysentery, cholera, colic, and *parietal* peritonitis, as we shall see when we arrive at the consideration of these diseases.

Expressive of a favourable issue in enteritis, in its several locations, are the gradual subsidence of pain, the yielding of the bowels, if constipation has existed, with natural or improved stools;—quiescence of the stomach and of the cerebral and nervous system; a more equable pulse; softening of the skin, and warm vapoury diaphoresis. Conversely, should the pain suddenly cease, with a languid circulation;—cold surface;—clammy sweats; collapsed countenance; tumid, and particularly tympanitic, abdomen;—obstruction of the bowels, or sour watery fœtid or dark stools, resembling coffee grounds;—singultus, or vomitings of a similar dark fluid; suppression of urine;—hurried respiration;—delirium, and jactitation;—we may infer a fatal result.

In noticing the anatomical characters of this disease, I commence with those of the small intestines. The mucous coat is most prominently concerned. We find here, on its surface, more or less of tenacious mucus or serum, or sometimes extravasations of coagulable lymph, or of blood, pure or otherwise. These fluids being removed, the lesions commonly observable, are an injection of the vessels, exhibiting an arborescent appearance, or the more diffused florid blush of inflammation, which is comparatively seldom, or of a more or less slatish or brownish hue, or of patches or stellated specks only, of these several shades or only ecchymosis. Gangrene, even in the worst cases, is not an ordinary occurrence in the small intestines. But softening of texture, which probably has been mistaken for it, often exists, and sometimes the reverse, greater consistency or density.

Besides these phenomena, appertaining to membranous inflammation, the follicular structure may be variously depraved. The isolated glands of Brunner, as well as the aggravations of the same cryptous formations of Peyer, are, especially in some instances, more or less developed or enlarged, sometimes becoming very conspicuous by their increased prominency, and are preternaturally red and gorged with blood. These are usually associated with inflammation of the tissues, though it has been asserted, that they may exist independently, and, in which event, the affection is held to be peculiar, constituting the *dotheninteritis*, a species of exantheme, as held by Brettonneau, Louis, &c. As formerly mentioned, this lesion is most commonly to be met with in the lower portion of the ileum, about the ileo-cœcal valve, though no portion of the intestinal canal is exempt from it, the glands of Brunner and Peyer being its principal seat. No doubt ulceration of the tissues, as well as of the follicles, do sometimes take place in acute enteritis, and, indeed, has been seen on numerous occasions by myself. But I reserve the description of it till I come to the chronic state of the disease, in which it oftener and more decidedly prevails.

Combined with many of the incidents enumerated, we occasionally meet with in the large intestines, most frequently in the colon, gangrene, the part black, rotten, and singularly offensive. But there is another and very different condition which may be confounded with it. From extreme congestion of the vessels, it sometimes happens that a large portion of the intestines becomes perfectly black, without, however, any rottenness of texture or offensiveness of odour. The commencement of the colon is the principal seat of the phlogosis and its ravages, neither the sigmoid flexure nor other portions being so apt to suffer. Common to both sections of the intestinal tube are constrictions, and involutions and introsusceptions are frequent in the upper one. These are the productions of irritation of the muscular fibres, which are redder and more defined than natural, and such too is the aspect of the serous covering when implicated with effusions of lymph in some instances on its surface. The inflammation sometimes extends further, embracing the *parietal* peritoneum, the mesentery and its glands, the omentum as well as the liver, and other organs inducing diverse changes.

Closing the account of the lesions in this case, it may be proper to state, that as, in relation to the stomach, some of the appearances hitherto deemed criteria of phlogosis, such as vascular fulness or injection, or the complexion of the surface, whether florid or dark, or slaty, are not conclusive of this pathological condition, they occurring where it could not possibly have existed. Nor is the contrary less true, or that inflammation does occasionally happen in this structure, and of great intensity, without any evidence whatever, during life, of its having prevailed, it being revealed only by dissection.

No elucidation is required of this or other phenomena connected with the disease, after what was said under a former and similar head, and I shall, therefore, proceed to the treatment, and which, as respects the upper portion of the intestinal tube, is also essentially the same as that of gastritis.

My remarks on the one as to the delicacy of the texture, the rapidity of the inflammatory process, and the urgency of the call for bold and decisive practice, are here equally applicable. The only difference of any moment in the two cases relates to the greater necessity in enteritis of opening the bowels. Though, from the irritation, there may be frequent mucous, watery, or bloody discharges, there is still, in many instances, a retention of fæcal matter, or even unrelenting constipation. Before we meet this indication, especially in violent attacks, by the use of purges, the loss of blood becomes indispensable to reduce the phlogosis. Neglecting this measure, the former are either impotent or exasperate the condition. Constipation here is owing, for the most part, to a want of power in the bowels to propel their contents from the intensity of the irritation, and particularly of the muscular coat. This being subdued, the difficulty ceases. By far the most effectual means of doing it is venesection, when urged to an adequate extent. But the lancet being forbidden by prostration of strength or other causes, or the anticipated effect not following its use, leeches or cups may be very advantageously substituted. These should be aided by cold applications, or warm fomentations, according to circumstances, and ultimately by a blister to the abdomen. Thus prepared for their administration, purgatives are to be exhibited—the best of which is the blue pill, worked off by castor oil or Epsom salts.

Enemata are preferred by some of the recent writers, under the supposition that purgatives, by the harshness of their operation, might prove injurious. Not having seen it, however, in practice realised, I presume the apprehension to be groundless, and, hence, I act otherwise. Fæcal matter, or an accumulation of acrid colluvies being allowed to remain, must be aggravatory of irritation and phlogosis. Enemata are generally ineffectual to the removal of such collections, and utterly fail when the latter are lodged high up the bowels. Besides which, there are few persons, in this country, such is the invincible prejudice to it, who will consent to be *bored* in this way, not to advert to the unskilfulness of the nurses, from their want of experience, by which the object of the remedy is defeated. Many ludicrous blunders have come under my observation in the awkward attempts to administer enemata.

The depreciation of purgatives here, I suspect, has proceeded from the premature use of them, without the preliminary depletion I have enjoined, or the drasticity of the articles employed, or the too long continuance of the process, as well, perhaps, as the influence of some late theoretical views. Their inappropriateness to the early state of the disease has been shown, and it is quite certain, that they are mischievous when of an active character or unduly repeated: so cautious, indeed, am I on this point, that I rarely resort to them, after the first employment, contented with keeping the bowels soluble by the mildest aperient medicines or injections, when the latter are permitted, and can be properly administered. For every other part of the treatment, I must refer to what was delivered in regard to gastritis.

Nevertheless, as we have seen, the lower section of the intestines may be differently affected, or instead of constipation, diarrhœa or dysentery exists in various gradations of force, with, however, such modifications in these affections, that they will hereafter claim a distinct notice. Enough is it for the present to state, that the leading object being, as in the phologis of the upper section of the tube, to subdue this condition, the same means are exacted, and on the attainment of which, then to evacuate the bowels in order to removal of scybalæ, or offensive matter of any kind, with an occasional appeal to opiates and other lenitives of pain. As applicable to the disease, wherever seated, it is to be observed, that the patient should be confined to his bed, nothing exacerbating it more than locomotion, and that the diet and drinks ought to be of the blandest description, barley or rice water, or thin mucilage, or the farinaceous preparations, so as to create no irritation or to form any mass of fæcal matter.

Chronic Enteritis.—From the close resemblance of acute and chronic inflammation of the bowels in reference to the whole intestinal tube, a very rare event in either case, I have little to add to what has been said of the symptoms of that general affection. It is only indeed, of late, that we have had any precise information of the chronic lesions of this structure, and previously lingering enteritis was contemplated merely as a protracted dysentery. No longer, however, are we ignorant of its exhibiting all the forms of the acute attack, these modifications being determined by the same circumstances. Existing, as we are now to contemplate it, the affection runs a very indefinite course, gradually becoming more and more exasperated, as well in its original symptoms, as by the acquisition of new ones, properly appertaining to it, or arising from adventitious complications. Disorganisations ultimately take place, and then it assumes another character, as we have seen, in regard to the stomach in similar conditions.

It were unnecessary, after this general statement, to describe more minutely the symptoms of the various stages of this pathological condition, and especially as the deficiencies in this respect will be, in a great measure, supplied by the account I shall immediately give of the peculiarities it derives from its locations in the several portions of the bowels.

Chronic enteritis is occasioned by a slower process of inflammation, of a primary nature, from similar causes, or follows, secondarily, an acute attack.

Let us now see its modifications from position. Except in a few particulars, they do not vary in the two states of the disease, and the inquiry will be rapidly dismissed. Being seated in the upper portion of the tube, with much of the physiognomy of protracted gastritis, it has still some peculiarities. Thus the uneasiness or pain from food is seldom felt for several hours, or till chyme has passed into the duodenum, when coming into contact with its sensible surface, sometimes vomitings with cramps ensue. Generally, also, the more inveterate attacks are marked by constipation or laxity alternately of the bowels—a saturnine complexion—still oftener by a dusky reddish or really jaundiced hue, with manifestations of hepatic derangement, to which may be added irregularities of the circulation, and, above all, palpitations of the heart.

But other of the small intestines do not escape, and the ileum is most apt to suffer, presenting sometimes its own peculiar phenomena, though oftener a compound of the symptoms of duodinitis and of those of inflammation of the large bowels. Characterised as the latter is usually, by vitiated, alvine and urinary discharges, with more or less tormina and tenesmus, it sometimes, though rarely, exists independently of these affections, or they are so slight as not to attract attention.

It is, on the whole, very difficult, at all times, to distinguish similar states of the two great divisions of the tube, or even the lesions of the separate portions of each, so analogous are the individual symptoms, and so blended do they become very frequently in the chronic forms of the disease. The position and kind of pain or tenderness, the appearance of the stools, and the difference in colour and state of the skin are entitled perhaps to most confidence. What these are, when the superior part of the tube is concerned, has been told, and I will, for the present, only mention, that, in the inferior portion, the suffering corresponds to the situation of the intestine, that there is more or less of diarrhœa, indicative of defective fæcation, and that the tegumentary tissue is singularly dry, rough, and furrowed, and of a dusky or clayey or pallid colour.

Considerable obscurity also may arise from the resemblance of the lesions of the neighbouring organs of the intestinal tube, the pancreas, the spleen, and especially the liver. As to the latter, however, we have to direct our decision, in addition to the position of the pain, the peculiarity of the stools. What is the nature of these in the hepatic disorders, I need not say. That they vary from those in the purely intestinal disturbances is sufficiently known, though, perhaps, not the degree of difference when the colon especially is deeply affected. There is, under such circumstances, a total absence or great deficiency of real fæcal matter. To the colon belongs the faculty of fæcation. As soon as the caput mortuum of chyme escapes from the cœcum, it is naturally acted upon, and fæces are the product. But this power being lost, or materially impaired, then, very different are the appearance and condition of the alvine discharges, consisting ordinarily of offensive chymous or such like matters, with an occasional mixture of scybalæ, or small portions of less perfect fœces, elaborated in some healthy portion of the colon.

Enteralgia, however, which is incident to every portion of the intestines when fully developed, has so many of the features of chronic enteritis, that it is very apt to be mistaken for it. As a *neuralgia*, having hereafter more formally to dispose of it, I shall now only remark, that, in the outline, it is characterised very much as is gastralgia, and that as the latter is distinguished from inflammation of the stomach, so may the former be from that of the bowels.

Chronic enteritis is usually very hard of cure in an advanced stage.. That of the duodenum is probably rendered so by the implication of the stomach or liver, and perhaps the pancreas, with which organs it is directly associated—and of the ilium, from the extraordinary proneness of that intestine to rapid and extensive ulceration. Nevertheless, in an attack, not so inveterate, whatever may be its location, we may hope to succeed in overcoming it, and occasionally in states of lengthened continuance. Even ulcers, when not large, are sometimes healed.

Less now need be said of the morbid anatomy of this affection, having presently, under other heads, to notice some of the most interesting parts of it. The phenomena, in its milder shapes, in the outline are very like those of the acute disease. Much the same changes does the duodenum undergo as the stomach under alike circumstances, such as increased vascularity and floridness, limited to points, or more diffused—or it may present all those shades of red, or slate, or brown, or livid hues formerly mentioned. Either softening or hardening, thickening or attenuation of texture occurs, with, however, seldom ulceration. But denudations of the mucous coat are not unfrequently detected, and also diverse lesions of the adjacent viscera, the pancreas, the liver, &c.

Little has been observed as to the jejunum. But nearly in every case of any severity and duration, with several of the appearances first noticed, the ilium is found replete with ulcers; sometimes very minute, and on other occasions of considerable extent, or at least some one or more of them. They are mostly follicular and of the aggregated glands.

To the whole of the small bowels is incident contraction of their calibre, in some cases amounting to an almost obliteration of it, especially about the ileo-cœcal valve, arising from thickening of the tissues. Three instances of it I have seen myself, one in consultation with Dr. Jackson, and several others are reported of the same kind.

The principal difference observable in the large intestines, is, perhaps, the greater tendency to destructive organic lesions. Though less liable to ulceration, when it does happen, it is more apt to spread from its membranous and not follicular nature. It is here, moreover, that we oftener detect inordinate thickening, and induration of tissue, or the reverse, ramollescence of it, scirrhosity and open cancer, luxurious vegetations, fungoid growths, strictures, hæmorrhoidal degenerations, &c.

It would occupy more space than I can well appropriate to the subject to describe these several lesions,—a part of them too has been erected into distinct diseases, claiming a separate consideration, and on some of them I have already commented. But so much interest is at present attached to ulceration of the bowels, that I cannot altogether pretermit it. This, it appears, may occur in the follicles, the isolated or aggregated, or in the tissues themselves, solitary or in immense numbers, even to the complete "riddling of the bowels." Follicular ulceration commences with tumidity, and sanguineous engorgement of the gland—so that it becomes considerably enlarged and prominent, which state it gradually loses, and is indented, resembling the flattened pustule, or rather vesicle of small-pox. Now ulceration begins, by which the whole substance is progressively removed, and where adjacent glands are similarly affected and matured, a confluence takes place, and the lesion is greatly increased in some instances.

In different modes and degrees the surrounding tissues are here implicated. When those clusters of glands which have received the name of Peyer, are the seat of ulceration, it is ushered in very much as in the preceding case. There is the same swelling and prominency, only that it presents large patches on whose surface slight ulcers may at first be perceived widely separated, which rapidly augment, run into each other, deepen, and prove very destructive.

Of membranous ulceration, the antecedent condition may be that of red spots, highly injected, or of more diffused redness and turgidity, or ramollescence. Its primary appearance is sometimes that of such extreme superficiality, as to seem to be mere excoriations or erosions. This, however, oftener happens in acute attacks. Nearly always, we find in chronic cases, lesions of this kind bearing a similitude to the common ulcer of the stomach, formerly noticed. Like it, there is a perfect solution of continuity, the various coats of the bowels being successively destroyed—the excavation becoming deeper and deeper, till, in some instances, the whole are absorbed, and a perforation takes place. These ulcers are of diverse sizes, figures, and numbers. They are often not larger than the smallest venereal chancres, sometimes so small as to be even invisible to the naked eye, and I have seen them of the dimensions of several inches, of every shape, and may be solitary or actually innumerable. As they are large in size, so do they usually less abound in numbers. More common, as is supposed to the colon, the cœcum is not exempt from them. I have seen two instances which were treated as abscesses of the right iliac fossa, where the pus evidently came from large ulcerous openings of the gut into that cavity—and a third in which the communication seemed to have been formed by an antecedent abscess externally to the cæcum.

The preceding ulcers of the several varieties have their origin in the mucous membrane. But on some occasions it is not so. The deposit of tuberculous matter may be in the subcellular membrane, which, by irritating the mucous tissue, shall excite inflammation eventuating in ulceration. As to scirrhosity and open cancer, I refer to the account previously given of these affections.

Of its pathology, having nothing more to say, I shall proceed, with a single remark to the treatment of the disease. It is very curious, that though the mucous membrane of the alimentary canal, and that of the pulmonary organs are of essentially the same constitution, there is a most material difference in their liability to the ulcerative process—it occurring very often in the one, and very seldom in the other tissue. No satisfactory explanation of the fact, so far as I am aware, has hitherto been given, and I have only to offer, as a mere conjecture, that the difference is mainly owing to the greater annoyances and irritations to which the stomach and bowels are exposed from food, drink, and medicines.

Discarding, in the management of these cases, all stimulants and tonics, as in the early stage of the gastric lesions, we rely chiefly on general and topical bleeding, counter-irritation, with the use of laxatives or enemata, so far as to obviate constipation. Conquering the phlegmasia, then to relieve irritation, and revive healthy secretion, a combination of the blue pill, opium, or henbane and ipecacuanha, may be directed.

Lesions of ulceration, or indeed any other essential organic change existing, little can be effected. Yet inasmuch as the first, at least, when slight, have been known to heal spontaneously or otherwise, by the unerring test of cicatrices, some encouragement is afforded to endeavour a cure. From their supposed vulnerary properties, the balsams have been chiefly confided in, and lately the sulphate of copper, the nitrate of silver, the strichnine, and many other articles, which I believe to be useless.

It being impossible to determine the precise nature and condition of these numerous lesions, I have deemed it best to manage them, without any very studious regard to special remedies, on general principles, taking care to regulate the regimen, so that it should not militate against the natural curative process, for the details of which plan I must refer to what was formerly delivered in relation to the affections of the stomach. Meaning hereafter to treat of the chronic intestinal fluxes, I shall postpone to that occasion the remarks which I should otherwise had to have made on these affections, when assuming such a character.

Duodenal Dyspepsia.—Next then, I am to advert to another chronic condition of the bowels, which may be properly viewed as an affection of that portion of the digestive operations performed in the intestinal tube.

Between gastric and intestinal dyspepsia, though a distinction was made by Hippocrates, the early Latin, and some of the modern authorities, as Hoffman, Pinel, and several others, it is said to have been first well described still more recently by a writer of the name of Yeates, in an essay contained in the fourth volume of the Medical Transactions of London, which has never reached me, having only seen a very brief review of the paper in a foreign journal. Considering how much of this function is carried on in the duodenum, by the pancreatic and hepatic fluids especially, and that it is intimately associated with the most important organs by the par vagum, and great sympathetic nerves, through the medium of the semilunar ganglion, we can scarcely hesitate to admit that its morbid states materially affect the assimilative processes, as well as that the former must be productive of a variety of secondary disturbances. To this intestine very great importance was attached in former times, so much so, indeed, as to be called a *second stomach*, and I am much inclined to believe that it exercises scarcely less influence than that viscus over the economy.

In the case which I am now to sketch, that of duodenal indigestion, the appetite declines, or becomes capricious, though sometimes is even voracious—the food oppresses, flatulence is very troublesome, much puffiness of the epigastrium exists, with occasional cramps, apparently of the duodenum. Fulness, distension, weight, or dull ache in the right hypochondrium, and across the loins, or between the shoulders, or down the arms, with numbness, or, as sometimes happens, along the lower extremities, prevails, with torpid bowels, light coloured stools, pellucid, or dark urine, and at other times depositing a pink, or lateritious, or white sediment, as thick as "gruel and water."

The tongue is coated with yellowish or brownish fur towards the root and centre. There is occasional giddiness, violent headache, occipital, or in the crown of the head and disorder of vision. Fever seldom is observed, though irregular chills may occur with cold hands and feet. The pulse is usually a little accelerated, sometimes, however, preternaturally slow, hobbling, or intermitting, and palpitation of the heart, and diverse nervous affections are very common. Dyspnœa, with occasionally a harassing cough, increases the inquietude of the nights, and ultimately an icterose or leaden tinge of the skin, with extreme despondency and general wretchedness, take place.

The etiology of this disease is the same as that of gastric dyspepsia, with the exception that it is perhaps more directly occasioned by deficiency or vitiation of the biliary and pancreatic secretions, rendering them unfit to perform efficiently their offices. But it is also ascribable, in some instances, to the fault of the stomach, it permitting ingesta to pass into the duodenum, not adequately acted on, or wrought into chyme.

Of the cases with which it may be confounded, there are dyspepsia of the stomach, some of the lesions of the colon, and several of the hepatic derangements. Exceedingly difficult is it sometimes to distinguish it from the first of these, owing mainly to the two cases becoming in a great degree blended, especially in the advanced stages. Gastric disorder, however, of this kind, may generally be discriminated. The oppression from eating, which in it is almost immediate, is postponed for two or more hours in the duodenal attacks. There is in the former comparatively seldom any intumescence or puffiness of the epigastrium, which, when it does take place, is towards the left side, and is relieved by eructations of wind, or vomiting of some acrid fluid. The puffiness, on the contrary, is nearly constant in the latter, and more on the right side, and the gas having difficulty in escaping by regurgitation through the pyloric orifice, belchings, or sour eructations, hardly ever occur. Nor does vomiting, or even nausea. By some of the late writers, the further peculiarity has been noticed of the duodenal headache being nearly always attended by brilliant ocular spectra, which, however, I have never remarked. These symptoms may serve in part also to distinguish it from chronically inflamed, or a dyspeptic state of the colon. But the peculiarity of the stools in the latter are still more decisive.

In regard to the hepatic lesions it may be stated generally, that, where the duodenum is exclusively the seat of the disease, by pressure on the region of the liver, no uneasiness will be complained of: whereas, if it be made by the introduction of the fingers under the ribs, the palm of the hand, at the same time, resting flat on the abdomen, considerable pain is expressed. But what is still more significant, "deep seated pain is pretty uniformly felt in the course of the duodenum, under the seventh or eighth rib, stretching towards the right hypochondrium and to the kidney, and again appearing as if in the loins." It is remarked by a late writer, that so fixed is this pain, that a patient of intelligence will trace it with anatomical precision throughout its extent. Be this as it may, of which, however, I am distrustful, these cases prove for the most part exceedingly ambiguous, and we can only arrive at a satisfactory conclusion, by a faithful study and comparison of symptoms, with the consideration of every other circumstance, calculated to dispel the obscurity in which they are enveloped.

Of the post-mortem appearances I know nothing, never having seen a case opened, or met with any report on the subject. But it is presumable that they are the same as those in gastric dyspepsia, and that the pathology of the two affections is also essentially similar. The chief difference consists in this, that, though it does proceed as in the case of the stomach from deficient innervation, by which the contractility of the bowels is impaired, it is probably as frequently to be referred to some aberration in the hepatic or pancreatic liquors, or to the transmission from the stomach of imperfect chyme. The mode in which the latter operates to such an effect is readily to be conceived. Habituated only to this bland pultaceous mass, whenever it is crude or not thoroughly concocted, it proves to the duodenum an extraneous irritant, which it has little power to dispose of, and suffers from it accordingly.

No inconsiderable portion of the management of gastric dyspepsia is as pertinent to this affection, and, indeed, in one form of the latter, where it proceeds from disorder of the stomach itself, permitting imperfectly digested matter to pass, it is precisely similar.

Not less here are local bleedings, counter stimulant applications, and finally tonics, in some circumstances, the most efficient means of cure. The chief difference regards the pathological states peculiar to the duodenum. Thus, where the secretions into it are defective, the organs whence they are derived, must be rectified, and these are the occasions probably in which such decisive benefit occurs from the alterative mercurial practice. Large accumulations taking place in the intestine, from any cause, infinite relief is afforded, by moving away the oppressive load by purging. Certain articles are thought to be especially adapted to this purpose, among which are small doses of the sulphate of soda in a weak infusion of gentian or quassia, or the same bitters in senna tea, or a solution of the sulphate of potash in an infusion of quassia, or the vinous tincture of colchicum, where much duodenal irritation prevails. But the *dinner-pill* I have commonly found preferable to every thing else, and this, aided by a duly regulated diet of mild articles, in moderate portions, and of easy digestion, with exercise, will generally effect a cure.

An allusion has been made to a condition of the colon in which a part of the digestive process is performed. No doubt, if fæcation may be so deemed, that such is the fact. But the cœcum is also concerned in the operation, it being the receptacle into which the contents of the ileum are poured and detained, apparently to undergo certain changes, preparatory to the commencement of fæcation. Looking at the cœcum, we shall find much in its structure and economy to sustain this view. More than any other portion of the intestinal tube, does it resemble the stomach in figure and endowments, particularly that of the ruminating animals. It abounds with glands, which secrete an acid, albuminous fluid, having very considerable solvent properties, and its contents being propelled in opposition to gravity, these, among other circumstances, seem very clearly to indicate a design for their further elaboration. The contents are usually a soft pultaceous mass, of a dark or yellowish hue, differing both from those of the ileum and colon, and hence it appears, that a material change is wrought in the cœcum on the alimentary mass it receives, fitting it to enter the subsequent bowel for a conversion into fæces. Granting this however, it still remains to inquire, whether we can with certainty at all times discriminate the two affections, and, were it possible to do it, would the treatment be so influenced so as to demand a separate consideration. Doubting it, I shall unite the two lesions, as well in the history as management of them, occasionally, however, noticing some of their individualities.

Among the most conspicuous of the symptoms of this condition, is much distension and puffiness in the arch of the colon, sometimes, however, restricted to the right iliac region, and of a more round, protuberant, and immovable or incompressible character, the cœcum then being probably engaged. Constipation is common, with borborygmi of extraordinary loudness, often induced by motion, and nearly always by pressure. The stools when procured, vary however, sometimes, exhibiting a greasy aspect, and here again the cœcum may be suspected of being chiefly in fault, as it alone has those sebaceous follicles, by which such oily secretions are afforded. Decided fever, or even vascular irritation, is rarely to be remarked, though the tongue is heavily coated, the breath offensive, and anorexia, hebetude of mind, lowness of spirits, and an indescribable wretchedness of feeling, uniformly attend, with, in the advanced stage, especially where the infarction of the bowel is considerable, pains in the back and loins, extending to the thigh, retraction of the testicle, strangury, hæmorrhois, and œdema of the lower extremities, owing to pressure on the nerves and blood vessels, in all which respects it is peculiar, or at least does not correspond to other lesions of the bowel.

The causes of this affection, so far as I have been able to determine, are essentially the same as disorder of the other parts of the digestive function. Every case of it which has come under my notice, except one, was in persons of impaired constitutions, from excess in eating and drinking, or the inordinate use of tobacco or opium, or from extreme indolence, or an unhappy state of mind long continued.

We have seen how analogous it is in some of its features to chronic colitis. But it differs from it strikingly, by the absence of inflammatory signs, and in the prevalence of constipation, and not the opposite state of the bowels. Equally may it be distinguished from the dyspepsia of the stomach and duodenum. Not to repeat what has been so recently said of its prominent indications, I have only to observe, that with few of these, the uneasiness after eating seldom comes on, and perhaps never, unless the bowel be previously loaded, or any exasperation takes place, sooner than three or four hours—that pain is apt to be experienced when the bowels are opened, and that the stools, though betraying a defective digestion, not often denote any want of bile.

Generally the disease is cured, or at least I have never failed to do so, where I had an entire control of the management of it. But like all similar conditions, it usually proves obstinate and discouraging, and from the want of perseverance on the part of the patient, our efforts are frequently baffled or defeated.

Its anatomical characters are not determined. The recent attacks of it, perhaps, have no appreciable ones, and the more inveterate I suspect would betray in some instances considerable organic changes, constituting sometimes mechanical obstructions to the passage of the contents of the bowels.

From its causes, its symptoms, and its probable lesions, I am inclined to believe, that in a very large proportion of cases, the affection is merely a defect of innervation, creative of an enfeebled state of the peristaltic power, and that even the most chronic and intractable shapes of it, have had a similar origin, the injuries to structure which may exist, being secondary, and consequential.

The treatment of this disease is simple. Let the bowels be kept open by the occasional use of rhubarb chiefly, apply frictions to the abdomen twice a day, wearing a Russian belt or flannel roller in the intervals around it, and strictly regulate the diet, the best articles of food being such as afford much nutriment in a small compass, so as to prevent the formation of any bulk of fæces, enjoining also habitual exercise. But these means failing, it will be proper to resort to dry cupping, sinapisms, or blisters, or the whole successively, to the spine, or abdomen, or both, to a course of mercury, cautiously conducted, and finally to those mineral springs which I have recommended in gastric dyspepsia, they being not less serviceable in similar states of the bowels.

It were out of place here to speak of the management of the neuralgic lesions of the bowels to which I have referred, and I shall therefore decline touching the subject. My next duty is to consider the preceding diseases *in extenso*, by which a fuller illustration will be given to some of the views contained in the general summary of them which is now completed.

BIOGRAPHY.

Art. IX. *Biographical Sketch of the Professional Career of Joseph Glover, M. D., of Charleston, S. C., with an account of the more important cases which occurred in his practice and of the principal operations performed by him.* By John Bellinger, M. D., Chairman, J. C. Whitridge, M. D., and T. Y. Porcher, M. D., a Committee of the Medical Society of South Carolina, appointed for that purpose. [Published by request of the Society.]

The committee who were appointed to report upon that part of Dr. Joseph Glover's Biography which relates to his connections with this Society, and to bring to your notice such cases which occurred in his practice, as might interest the profession generally, beg leave to state, that, having examined the Records of the Society, Dr. Glover's Note Book, and other sources of information, they have found abundant materials for their purpose. In using these materials, they have aimed to be concise.

The committee have been gratified in discovering that, from the commencement of Dr. Glover's career, success and distinction waited on his efforts. As a candidate for the Medical Diploma of the University of Pennsylvania, he submitted to the Provost and Faculty a Thesis on Digestion, which was published among Dr. Caldwell's *Selected Theses.* It is entitled to a full share of the encomium with which the editor introduces the *second volume* of that collection to the Medical public; *i. e.* that those essays, "considered as separate specimens of intellect and investigation, do great credit to the individual writers; and, taken together, constitute a monument peculiarly honourable to the Medical School of Philadelphia." He graduated in 1800, and, in September of that year, was elected a member of this Association; the following enumeration embraces the most important circumstances connected with his membership. (As most of these facts relate to matters of local interest, the register is omitted.) Two or three of these subjects require a more particular notice. One of the objects contemplated by the founders of the Medical Society of this city was a Dispensary—an institution for furnishing medicines and medical attendance for the poor. A plan of such a charity was drafted contemporaneously with the Constitution of the Association, an appropriate address to the citizens was prepared and published, and an anxious effort made to accomplish their benevolent designs. Notwithstanding the failure of this attempt—for it did fail—the society renewed their exertions in the year 1801; a committee, of which Dr. Glover was a member, was appointed to organize the plan of a Dispensary. A report from them was presented and circulated among the members, and, having been discussed and amended, was transmitted with a suitable explanation to the city council; which body, in consequence of the strong recommendations of the Medical Society, enacted an ordinance founding a Dispensary, and authorizing the society to nominate physicians and surgeons to the same. The election of the trustees, without whom the next steps could not be taken, was however postponed by the council, until the society; impatient at the delay which had exceeded six months, again urged the city authorities to proceed. Council then elected thirteen trustees, and communicated with the society, who immediately organized a part of their members into a body of attending physicians, and the plan was carried into execution. The medical gentlemen, who volunteered to serve, attended monthly in rotation; some of the senior members acting as a corps of consulting physicians. This system of attendance was kept up for sixteen years. Dr. Glover was one of the number who offered their services gratuitously to the poor; and, in 1805, received in common with his brother practitioners a vote of thanks from the trustees "for their diligent, skilful and humane attention," rendered "without any pecuniary compensation." In 1810, the benevolent Mr. Alexander Shirras endowed the institution by devising several houses and lots, to the Intendant of the city, to the President of St. Andrew's Society, and to the President of the Medical Society, in trust for the benefit of the sick poor. In the preamble to his will, he declares that he was actuated by a conviction, "That the Dispensary established in this city had been of great benefit to the poor and indigent inhabitants, as well as to strangers, when afflicted with sickness," and, moreover, by a desire "to mitigate the sufferings of the distressed, ease the inhabitants, and assist the medical gentlemen in their humane intentions." In honour of this donation, the city council, by an ordinance ratified in November, 1813, established a Dispensary to be known and distinguished as The Shirras Dispensary; the services of the physicians were continued as though no change had taken place in the name or circumstances of the institution. In the year 1818, in consequence of rumors of dissatisfaction on the part of the patients, the Medical Society appointed a committee of inquiry, who, after an investigation of the causes of discontent, recommended an alteration of the system of attendance; to which, as thus conducted, several serious inconveniences attached. The principal of these were, the delay in finding the physician for the month, owing to ignorance of his residence; he being obliged, in some cases, to send to a great distance for medicines; the detriment arising from the frequent change of practice in chronic cases; the reluctance of females to communicate their symptoms to different individuals. For such reasons the society proposed, that a single physician should be elected to attend the patients of the Dispensary, and that he should be allowed a salary sufficient to compensate him for devoting the chief part of his time to their wants. The advice was acted on, and the happiest results have been obtained. The office has always been esteemed honourable and desirable, and excellent medical talent has been ever at the command of the trustees.* The committee conclude their remarks on this topic, by noticing an inaccuracy of the late honourable intendant, who, in a "Report, containing a Review of the proceedings of the City Authorities," mentions the Shirras Dispensary, as "a charity established by the late Mr. Shirras, who placed it under the control of the city council, for the benefit of the sick poor of the city." *Reddite quæ sunt Cæsaris Cæsari.* We cheerfully concur in honouring the memory of Mr. Shirras, yet we expect that justice shall be rendered to the Medical Society, for they first perceived the want of such an institution, framed a plan for its organization, and, having in vain entreated the co-operation of their fellow-citizens, persevered in urging the measure upon an apathetic council, and finally carried it into successful operation.*

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* At present two physicians are employed.

The next important item of public business with which Dr. Glover was concerned, was the preparation of a Report upon the causes of our "Endemial Causus," the yellow fever. From the formation of the Medical Society, it has been usual for the civil authorities to request advice upon matters relating to hygiene and medical police. In the year 1795, an able communication was made to the city council, in reference to the general causes of disease; and sundry very useful measures suggested for the preservation of the general health. One of these was, that a number of citizens should be appointed to visit and inspect premises, and be empowered to cause the correction of nuisances. Council immediately acted on the recommendation, and thus was laid the foundation of the Board of Health. It was also advised, that trees should be planted in the streets, and *that a piece of ground should be purchased without the city, as a public burial place.* Many other serviceable hints were given in this Report, which, by order of council, was printed in the daily papers. In 1799, in reply to an inquiry of the governor of the state, the society referred to their previous report, and in addition objected to the "filling of low lots, and the extension of streets, by means of putrifying materials;" and proposed the introduction of pure water from the country "as conducive to health, when used in drinking and cooking; and as serviceable for the extinguishment of fires." In 1808, a committee, of which Dr. Glover was chairman, prepared that (among ourselves) memorable essay upon the causes of fever; which, having been passed through the crucible of not fewer than five formal discussions, was ultimately modified, so as to suit as an answer to the inquiry of the Board of Health, respecting the means of preventing the recurrences of that terrible visitant, the yellow fever. This Report enters minutely into the subject of the local and physical causes of disease in a large city. It treats of the removal and destruction of offals; of the attention necessary to be paid to the state of docks, wharves, cellars, stores, and holds of vessels; of the exposure of decaying animal and vegetable substances; of burial-grounds among the habitations of the living; of the importance of irrigation, and of encouraging a luxuriant growth of trees; of the proper time for cleaning out the subterraneous drains; and of the materials for filling low places. It was regarded as so complete, that at two subsequent periods, when advice was asked by the city council and Board of Health, the society referred them to this paper; on the last occasion remarking, that it "affords a full and complete summary of what, upon mature investigation, appears the best calculated to preserve to us the blessing of health." We do not hesitate to declare, that it deserves to be kept perpetually in print by the municipal authorities, as a rule for the proceedings of the public officers and citizens generally, in relation to medical police regulations. It is surprising how frequent amongst us are infringements of hygienic principles, notwithstanding the excellent advice, requested or proffered, which this society has repeatedly given. To show how little our recommendations have been remembered or regarded, we will cite two instances. Among the suggestions made to the city council by the Medical Society in 1795, was, that "trees should be planted before the houses of citizens:" and, in Dr. Glover's Report, in 1808, the advantages to health, of a luxuriant growth of trees were pointed out; and the chemical changes produced in the atmosphere by animal and vegetable respiration explained. The commentary upon these monitions is the thoughtless destruction, within a few years past, of the trees which grew in the most populous parts of the city.* Another suggestion, emanating from the Medical Society, has lately been the subject of much discussion, both in print and in conversation: we allude to the proposed prohibition of interments in the city, and the establishment of a cemetery beyond the bounds. In 1795, the Medical Society pointed out both the evil and its remedy to council; in 1799, repeated the advice to the governor; in 1808, urged the proposition upon the Board of Health, and instructed a committee to memorialize the state legislature on the subject, and to pray that body to interdict the practice of interment in the city—in 1810, renewed the suggestion to council; and, in 1815, reiterated the recommendation to the Board of Health. Yet, in 1838, this identical measure is proposed by the commissioners of the "temporary hospital for the sick poor;" and appears to be regarded by most persons, as indeed it is spoken of by the mayor, in his report upon the subject, as a NOVELTY! Again, we exclaim, *reddite omnibus debita—cui honorem, honorem.*

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* "Three institutions emanated from the Medical Society, of great public utility, the Humane Society, the Charleston Dispensary, and the Botanic Garden."—*Ramsay's South Carolina*, vol. ii, page 106.

Eminent as several of the medical faculty of this city have been as physicians, it is believed that of those who entered the profession preceding Dr. Glover, no one had devoted much attention to surgery: that brilliant department of our science was comparatively neglected. He commenced practice, therefore, at a juncture favourable for rapid success. Frequent opportunities occurred for the exhibition of his judgment, boldness, and address; and in a few years his reputation as a surgeon was established. One of the first capital operations which he performed, was the rare one, of excising part of the spleen. The patient, a negro belonging to Major Pinckney, was stabbed with a knife on the 12th of August, 1801, at Moultrieville. The weapon penetrated obliquely the left hypochondriac region, making a wound of four or five inches in length; the cartilage of one or two of the false ribs was divided; and some of the omentum, together with a considerable portion of the spleen protruded. Surgical assistance could not be obtained—the next morning he was brought to the city, and at 11 o'clock A. M. was visited by Drs. Matthew Irvine and Joseph Glover. He had lost much blood. The protruded parts presented so gangrenous an aspect that their removal was decided on. A small piece of the omentum, and a large part of the spleen were cut away with the scalpel; a branch of the splenic artery was secured with a needle and ligature—the remaining parts having been properly cleansed, were returned into the abdominal cavity. The wound was closed with interrupted suture, which were secured by the necessary plasters and bandages. The ligatures separated early; and the whole process of healing was as rapid as that of a wound in any part of the flesh, similarly neglected at first, would have been. In some of its circumstances this case resembles the one reported by Cheselden (on the authority of Mr. Ferguson) in volume xl of the *Philosophical Transactions*, which, strange to say, has escaped the notice of the very accurate and industrious Hennen, who cites the only three other instances, so far as our research extends, in which the removal of the spleen or a part of it has been accomplished by British surgeons.

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* "The next best practicable mitigator of heat and corrector of foul air in Charlestown, is trees planted in all the streets which can admit them. . . . . . Cities built with marble, if destitute of trees and vegetation, would only afford a miserable residence to splendidly wretched inhabitants."—*Ramsay's So. Ca.*

Among the earliest of Dr. Glover's cases, were operations upon the eye. For a number of years he almost monopolized the practice of this branch of surgery; and so considerable was his reputation as an oculist, that patients from the interior of our own, and from the neighbouring states, frequently resorted to this city, for the advantage of being treated by him. For cataract, he operated either by extracting or by depressing the lens. Many of his patients were "elderly" persons, and he ascertained and has recorded the ages of a few old persons upon whom he operated with success. As it is uncertain at what age, operations for cataract may not be undergone with a fair prospect of relief, we mention the ages of three of these "very elderly" individuals, *i. e.* 65, 70, and 83 years.

The next important operation he performed was lithotomy. Calculous diseases are so rare in this locality, that to have cut for stone in the bladder constitutes an era in the professional career of any of our surgeons. As late as 1808, only three operations of the kind could "be distinctly and certainly recollected as having been performed" in Charleston. Two of these were *done* by Dr. Turner, of Connecticut; (tradition relates that this distinguished operator visited our city by invitation for the purpose;) the third was by Dr. Glover; and all were successful.* Since that date, six similar and likewise fortunate operations have been performed;† of these, two cases came from abroad. So that, up to the present time, (December, 1840,) only seven operations for stone in the bladder have been performed upon persons who were natives, or who had been for many years residents of Charleston.

Excision of the prolapsed or inverted uterus, although reprobated by Ruysch, has, within the present half century, been in repeated instances safely performed.‡ The committee regret that Dr. Glover's interesting case has been so loosely reported, as to allow of a doubt, whether the tumour excised was a polypus or the uterus itself; of the causes of deficiency in the publication they do not feel at liberity to remark. In addition to the history contained in the fourth volume of the American Medical and Philosophical Register, they have been furnished with notes of the case, taken at the time by Dr. Glover himself. From these it is clear, that all who examined the tumour, both before and after its removal, were convinced of its nature; and the expression of Dr. Baron, as significant of the opinions of all, is preserved—"if this is not an inverted uterus, I have never seen one." Of Dr. Baron's competency to judge, the committee deem it superfluous to argue. Dr. Glover also relates, that, in 1834, he had visited his former patient, Mrs. H., whom he found in good health, and that he was assured by her that she had never menstruated since the operation.

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* Ramsay's South Carolina, vol. ii, p. 94.

† Again by Dr. Glover; once by Drs. B. B. Simons, Geddings, and Bellinger; and twice by Dr. Ogier.

‡ Ruysch relates that he witnessed an operation for the removal of a prolapsed uterus, which caused the death of the patient. He cautions surgeons "ut nunquam tam periculosam, imo detestabilem suscipiant operationem, ne mortem inevitabilem conciteant."—*Thesaurus Anatomicus*, vol. viii, No. cii, Not.

The following is a summary of the case. The patient was forty-three years of age, a widow, who had never borne children. For several years she had laboured under menorrhagia, procedentia uteri, and a congested condition of that organ, considered by Dr. Shecut as scirrhous. During one of her attacks of profuse hæmorrhage, the uterus became completely inverted and prolapsed. A consultation was held, at which Drs. David Ramsay and the elder Baron were present; a difference of opinion respecting the propriety of excising the tumour occasioned an adjournment to the next day, when it was determined that this chance of life should be afforded the patient, as reduction, having been perseveringly tried, was found to be impossible, and gangrene, having commenced, was rapidly extending. Dr. Glover immediately applied a ligature upon the neck of the tumour as far within the vagina as was practicable, and with a bistoury cut away the whole protruding mass; the ligature separated in less than forty-eight hours. The tumour presented a very diseased appearance, measured eleven inches in length and eighteen in circumference, and was supposed to be five pounds in weight. The patient rapidly recovered.

Against the opinion that this was an *inverted*, or, as it has sometimes been termed by former obstetrical writers, a *perverted* uterus, it has been urged, that inversion of that viscus can occur only immediately after labour, or after previous distension by a foreign body. This patient having never been pregnant, and, no foreign body having been present, the uterus it is concluded could not have been inverted. However, Boyer* acknowledges that he had held the general opinion respecting the predisposing causes of inversion of the womb, and thought that it could not take place without a previous distension of that organ, until he met the uterus inverted in a woman who had not had a child for fifteen years, and whose uterus did not contain a foreign body. Sabatier† affirms, that it has been proved by many facts, that inversion of the womb may depend upon internal causes, and may happen indifferently to women who have not borne children, as to those who have; among those causes he enumerates hæmorrhages. Mr. Watkinson‡ relates two cases, both of which occurred at a period very distant from labour. "Of the cause and origin of the inversion in one of these cases, I think there can be little doubt; it seems to have been occasioned by the relaxed state of the os uteri, and perhaps of the uterus itself, occasioned by the long protracted hæmorrhage, and to have been excited by the presence of coagula, (which must necessarily have formed during that period,) and along with some of which, it might probably have become inverted." While suggesting these authorities in reply to an objection which they have heard made against the opinion, that the case of Mrs. H. was one of inversion of the womb, the committee readily concede that that opinion is attended with difficulties; and that, if they had been obliged to form a judgment solely upon the published report, they could not have arrived at this conclusion. But having respect to the experience and standing of the physicians, who had an opportunity of examining the tumour, both before and after its removal, they deem it reasonable that objections, founded on equivocal grounds, should be abandoned in deference to the character of the witnesses.

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* Mal. Ch. tom. x, p. 511.

† Med. Op. tom. iii, p. 690.

‡ London Med. and Phys. Journal, vol. vii.

Before dismissing this subject, the committee beg the indulgence of the society while commenting upon the injustice with which Mr. Alexander Hunter, who demonstrated the safety of this operation, has been treated by several celebrated English writers. In Duncan's *Annals of Medicine*, for 1797, he published the history of a case of inverted uterus, occurring immediately after parturition; reduction being impossible, the organ was removed with a knife, a ligature having been previously applied. In 1802, Mr. Watkinson related two cases, on one of which he had operated unsuccessfully; he omits to mention Mr. Hunter. But, in 1806, Dr. Joseph Clarke, the distinguished accoucheur of Dublin, published the particulars of a case which occurred three years before. He refers to Mr. Hunter in terms of deserved praise, acknowledging that the operation was undertaken by him in imitation of, and because encouraged by the issue of, Mr. Hunter; who, he remarks, "unaided by consultation, and without encouragement from modern authors, ventured successfully to deprive the female constitution of one of its most important organs." In 1814, Sir C. M. Clarke put forth his work upon the Diseases of Females; in the chapter upon this accident, he cites a case from Paré; and relates one from his own practice, upon which Mr. Chevalier, surgeon to the Westminster General Dispensary had operated. In real or affected ignorance of their existence, he makes no allusion to the cases of either Hunter, Watkinson, or Joseph Clarke; in consequence of which omission, he was addressed by the latter, calling his attention to the case previously published by himself (Joseph Clarke). Sir Charles, in the future editions of his work, corrects his oversight, so far as this particular case was concerned, but still maintains silence respecting the prior ones of Hunter and Watkinson; and completes his inaccuracies by referring to the *Edin. Med. Comm.* for the history of a case by Dr. Alexander Hamilton, upon which, he says, the operation was performed. This, however, is a mistake, as no operation was attempted: the uterus was irreducible, and the patient recovered with the womb remaining completely inverted.

Next in chronological order we have the essay of Mr. Newnham expressly on inversion of the uterus. The committee regret that, notwithstanding very active inquiries made in this, and in the principal northern cities, they have been unable to procure a copy of this work: their strictures upon it are founded on a review of the essay, copied from the *London Medical Repository*. From this it seems that Mr. Newnham infers the feasibility of extirpating the uterus from the fact, that it has been subjected, with impunity, to various kinds and degrees of violence. "The recent accounts from France, of sections of portions of the womb, as well as operations of a more remote period, together with successful instances of the Cæsarean section, and cases of recovery from rupture of the uterus, are cited by our author, for the purpose of proving that this organ may be subjected to considerable violence and irritation, without producing fatal symptoms; and having so far established this assumption by the aid of accredited testimony, he proceeds to its more complete confirmation by detailing the history of a case in which the uterus was extirpated with complete success."* Mr. N. applied a ligature of very strong silk upon the *perverted* womb: about the 25th day the tumour became detached; the patient recovered, and afterwards acknowledged to an inquisitive visitor that "the privileges of matrimony were as gratifying to her" as at any period of her married life. To prove that the uterus may be extirpated, harmlessly to the patient, it surely was irrelevant as well as unnecessary to adduce instances of resection of its neck, of the Cæsarean incision, or of its rupture: other proofs were not wanting, nor could better be supplied than the public already possessed in the cases of Hunter, of Joseph Clarke, and of Mr. Chevalier. To add another fact, to their previously recorded success, was all that should have been done.

Following Mr. N. comes the popular lecturer on midwifery, Dr. James Blundell.† He taught "that it is now a well-known fact, and it is to Mr. Newnham of Farnham, that we are mainly if not solely indebted for the establishment of this fact in modern practice, that the womb may be extirpated by ligature in the same manner as a polypus. ***** Mr. Chevalier first led the way to this operation." He proceeds to mention two other cases that had been operated upon, one by himself and the other by Mr. Windsor; and sums up his experience by remarking, that these four cases are the only ones of which he has had a "more familiar knowledge."

We may hereafter be silent respecting the claims of American surgeons. What prospect is there that justice will be rendered to them by British authors generally, when we find that distinguished writers skim carelessly over their own literature, and set up or grant titles to originality, wilfully regardless or blameably ignorant of the rights of their own countrymen!

The next operation which we will notice is one towards which the hopes of the profession are at the present time anxiously directed; we allude to puncturing the head for the evacuation of water. This has shared the fate common to all important procedures of surgical practice, having been by some strongly condemned, and by others warmly advocated. As it is now in high repute, and as we conceive that they, by whom in modern times this operation has been performed, have been unjustly slighted by the manner in which Dr. Conquest's cases have been celebrated by a portion of the English medical press; we shall demonstrate that puncturing the head has been repeatedly referred to and practised in the last half century as a remedy for chronic hydrocephalus. We shall make our citations exclusively from British and American publications.

1. In volume xlvii of the *Philosophical Transactions*, for 1751-52, is contained a translation of the case of M. Le Cat, by giving, along with other particulars, a description of the trochar and canula invented by him expressly for this variety of tapping.

2. In 1758, Gooch saw a case upon which "a rash and daring pretender to surgery" was desirous to operate.—*Chirurg. Works*, vol. ii, p. 36.

3. In 1765, the operation was alluded to, and many cautions given respecting its performance by Donald Monro; *Essay on Dropsy*, &c. We quote from the third edition—the first was about ten years prior.

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* Newnham's Essay was reviewed in the London Medical Repository for 1818; and this review was copied into the Eclectic Repertory, v. ix, for 1819.

† Lectures in the Lancet for 1828-29.

4. In 1778, Dr. Remmett operated, and thought "that many cures by this operation might be found."—Duncan's *Med. Comment.* vol. vi.

5. In 1785, Joseph Hooper related to the London Medical Society the history of a case, which one of the faculty "had offered to cure by tapping."—*Mem. Med. Soc. of London*, vol. i.

6. In 1818, Dr. Joseph Glover operated: we give this case precedence over Dr. Vose's and Dr. Wetmore's, because it was published before theirs.

7. In this year was published the case of Dr. James Vose: he had operated in 1817.—*Med. Chirurg. Trans.* vol. ix.

8. In 1821, we have an account of Dr. Wetmore's case, operated upon in 1816; and, in the same paper, Mr. Callaway's case is mentioned.—*Am. Med. Rev.* vol. iv, 1821.

9. In 1825, we have the cases of Mr. Syme, (*Ed. Med. and Surg. Journal*, vol. xxiv,) and of Mr. Grey, (*Lond. Med. and Phys. Journal*, for September, 1825.)

10. In 1827, the case of Dr. Lee.—*New York Med. and Phys. Journal*, December, 1827.

11. In April, 1828, Oppenheim's elaborate Essay on Puncture in Hydrocephalus was reviewed in the *Ed. Med. and Surg. Journal.*

We learn from the perusal of those cases: 1. That the operation has been thought adapted to the disease, whether the water be contained in the ventricles or effused within the dura mater. Dr. Lee explicitly recommends its performance in the former contingency; contending that the ventricles being filled, "would only be an additional argument in favour of the operation." As puncturing the ventricles had been heretofore regarded as "impossible," or as "not to be attempted," the committee are disposed to ascribe to Dr. Charles Alfred Lee, of New York, the credit of having first distinctly advised a resort to the puncture even of the ventricles.* Indeed, whenever the head is tapped, it is done with the risk of penetrating those cavities; for it is not possible to decide upon the seat of the effusion in most cases of chronic hydrocephalus. The case operated upon by Le Cat, and others, which it is unnecessary to allege, sustain this remark.

2. That, although various instruments have been and may be employed for the evacuation of the water, "a small trochar and canula" are the most fit for the purpose.

3. That a point about midway of the coronal suture, or, to quote the

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* "Neither ought he to attempt the operation when the water is situated in the ventricles, or deep in the substance of the brain....... If the water be seated in the ventricles, or substance of the brain, this operation will be of no service."—Donald Monro's *Essay on Dropsy*, p. 113–114.

In several dissections, Dr. John Fothergill found the same appearances, viz. "a collection of clear, pellucid lymph, amounting in quantity, by appearance, to two, three or four ounces, contained in the ventricle of the brain, under the corpus callosum, from whence it was impossible to discharge it by any medicine or operation hitherto discovered."—*Med. Obs. and Inq.*, vol. iv, p. 42.

"However certain we may be of the cavities of the brain being loaded with an extravasated fluid, and consequently of our knowledge of the disease, we must be content to resign the patient; as any operation to relieve him, by drawing off the water, cannot but be fatal."—Dr. W. Watson, *Med. Obs. and Inq.* vol. iv, p. 87.

When the water of hydrocephalus is contained within the ventricles it "cannot obviously be made the subject of such experiment as that of puncturing the pulpy substance of the brain."—*New York Med. and Phys. Journal*, New Series, vol. iv, 1818; editorial comments.

precise direction of Dr. Lee, "between the frontal and parietal bones, on the lateral part of the head," is the most eligible spot at which to make the puncture.

In addition to the cases which we have cited, a few others are referred to by authors, which (owing to the incompleteness of several of our setts of Journals) the committee have not been able to verify. The instances which we have enumerated are, however, sufficient to prove, that, prior to "the autumn of 1828," the operation of puncturing the membranes, and even the ventricles of the brain, with a small trochar and canula, had been recommended and practised. At that period a new era began, Dr. Conquest commenced, to operate. From the fall of 1828, when he "performed his first operation," to the time of making his report to the Lancet in 1837, he had punctured the heads of nineteen hydrocephalic patients, of whom "ten were living when last heard from." He operates "by passing a small and delicately constructed trochar into one of the lateral ventricles, and drawing off so much of the fluid as the powers of the constitution will admit of." He introduces the instrument "in the course of the coronal suture about midway between the crista galli process of the ethmoid bone and the anterior fontanelle." The results of Dr. Conquest's operations seem brilliant; but, reasoning from experience and from pathology, we are convinced that the supposed cures will not be permanent. But, assuming that they shall prove as real as they are astonishing, one thing is manifest, that there is nothing of originality about them—neither in discharging the fluid from the ventricles, nor in the use of the trochar and canula, however "small and delicately constructed," nor in the selection of the spot for puncturing. Yet listen to the following quotations: "The employment of tapping as a remedy in hydrocephalus was *long since suggested*, but it is only *lately* that it has been *attempted*."* "*The most important contribution which has been made for many years to the domain of Medicine, is unquestionably that of Dr. Conquest, relative to the treatment of chronic hydrocephalus by tapping*."† "This is an important paper, and affords ample testimony of the great value of the practice, *for the introduction of which into medicine we are all so deeply indebted to Dr. Conquest*.‡

The committee must not dismiss this subject without a distinct avowal of what is due to the doctor; that his communication is written "in a modest and philosophical tone," (blemished, however, by a paradoxical compliment intended for some of his medical friends,)§ and that although silent respecting the prior operations of others, he himself has advanced no preposterous claims to originality.

The history of Dr. Glover's case was published in pamphlet form by the Medical Society of South Carolina, in July, 1818. It was reported in the *N. Y Med. and Phys. Journal* of the same year, prefaced by the following editorial remarks: "We are indebted to (that ancient and respectable institution) the Medical Society of South Carolina, for the publication of this case, one which extends the practical domain of surgery, discloses new physiological phenomena, and withal furnishes us with new and interesting facts respecting a fatal and frequent disease." The case was copied into the *Philad. Journal of Med. and Phys. Sciences* for 1821: it is also noticed in the *Ed. Med. and Surg. Journal* for 1828, in the review of the Essay of Oppenheim, by whom it is cited: it has been quoted at considerable length by Bricheteau in his article on Compression in the cure of Dropsy, in the *Arch. Gén*, for 1832:* and is mentioned by Copland in his *Dict. of Practical Medicine,* now in course of publication.

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* Dr. Russell, Lancet, 1832.

† Editor of the Lancet, 1838.

‡ British and Foreign Medical Review, 1838.

§ "Although *exclusive dependence* has been placed upon the *withdrawal of the fluid, without the auxiliary assistance of any pharmaceutical or other medical means*, yet I consider *much of the success* to be attributable to the *kind and able superintendence* of medical friends."

Although we claim for Dr. Glover the credit of having contributed to revive an operation which had been neglected by British and American surgeons for 40 years (no instance of its performance having been published in the interval between his in 1818, and Dr. Remmett's in 1778,) we desire to be understood as having no faith in its supposed curative influence over hydrocephalus. Our settled opinion is, that the past experience† of the profession will undergo no change in consequence of Dr. Conquest's *ten* cases which "were living when last heard from."

One other of Dr. Glover's cases deserves to be remembered: it is that which he related in the oration delivered in 1809, of a patient whom he treated successfully for ascites, principally by tapping. He regarded paracentesis not merely as a palliative, but as a curative means, and advocated its early and repeated performance. In the instance to which we refer, it was resorted to *fifteen* times.

The committee refrain from enumerating the more common operations performed by Dr. Glover, as, although numerous, they were not attended by circumstances sufficiently curious to entitle them to particular notice. They conclude their Report by expressing their belief, that at home he will long be remembered for his zealous promotion of the objects of our association, and for his boldness, dexterity, and success as a surgeon; whilst abroad his fame will rest upon his having fearlessly undertaken, and having skilfully accomplished operations, for the performance of which the records of medicine furnish so few precedents.

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* The editor of the *Lancet*, (No. 11, for Dec. 1838,) in refuting Mr. Barnard's supposition that the treatment of chronic hydrocephalus by pressure, originated with himself, refers to the *Observationes Medicæ* of Riverius, to Rosen's work on the Diseases of Children, and to Sir Gilbert Blane's paper in the *London Med. Repository*, as containing notices of this mode of treatment anterior to the time of Barnard's "discovery." In addition to these authorities, he might have instanced D. Monro, who tried "purges, blisters, issues, *bandages*, and other remedies." (*Med. Trans. of Coll. of Phys. of London*, vol. ii) Brecheteau gives Dr. Glover priority over Sir Gilbert Blane, and the contemporary English physicians, in the use of the bandage as applied to the treatment of hydrocephalus: in his hands, as in those of Le Cat (who, "every time that he made the evacuation, bound the head with a strong *capeline*,") the bandage was subservient to the trochar or the lancet.

† "As the assistance of diet and surgery has been found inefficient in this disease, it has been hitherto looked upon as incurable."—*Le Dran.*

"But hitherto, whenever this operation has been performed, the event has been unfortunate, and the patient died soon."—*Monro's Essay.*

"It would be imprudent to seek to remedy it by one of those operative proceedings of which we make use elsewhere: the attempts which have been made have succeeded so badly that it is not allowable to make others."—*Sabatier Med. Op.* v. ii, p. 525.

"There is not a single well established instance of success on record."—*Ed. Med. and Surg. Journal, April* 1828. Before this time, Dr. Vose's case, once regarded as successful, had terminated fatally.

"It has been in several instances performed by my able colleague, Mr. Dendy, at the infirmary for children; but I recollect no case in which it has ultimately succeeded, although the management of the cases could not have been in more experienced hands." —*Copland Dict. of Pract. Med.* vi, p. 682.

Good states, that "the water has also been evacuated in many instances with full success by a lancet:" however, he refers to Dr. Vose's case alone."—*Study of Medicine*, vol. iv, p. 267.

John Bellinger, M. D., Chairman.
J. B. Whitridge, M. D.
F. Y. Porcher, M. D.

REVIEW.

ARTICLE X.—*Statistical Report on the Sickness, Mortality, and Invaliding among the Troops in the West Indies. Prepared from the Records of the Army Medical Department and War-office Returns. Presented to both Houses of Parliament, by command of her Majesty.* London: 1838.

Statistical Reports on the Sickness, Mortality, and Invaliding among the Troops in the United Kingdom, the Mediterranean, and British America. Prepared from the Records of the Army Medical Department and War-office Returns. London: 1839.

IN 1816, Sir James M'Grigor, director-general of the medical department of the British army, established a system of returns and reports, which has given birth to documents extending over 160 folio volumes, containing an historical record of the medical transactions of the army. The duty of arranging these materials, and of condensing the statistical results, was entrusted to captain (now major) Alexander M. Tulloch, who was assisted in the preparation of the medical details by Henry Marshall, Esq., deputy inspector-general of hospitals, and by staff assistant-surgeon Balfour. The task was a difficult and laborious one—a labour which has been amply repaid by the interesting and valuable character of the results. The volumes before us are the first fruits of this enterprizing spirit, of which, as they form condensed documentary reports, replete with numerical details, it is no easy matter to furnish an analysis. The later reports "on the sickness, mortality, and invaliding among the troops in Western Africa, St. Helena, the Cape of Good Hope, and the Mauritius," will not now engage our attention.

Much has been said of late of the value of statistics—the numerical method as applied to the sciences. "Statistics," says Professor Guy, "considered as a speculative science, will scarcely suffer by comparison with the most perfect of the mixed mathematical sciences." It is a subject of deep importance to the physiologist and the philanthropist. Numerical analysis applied to governmental objects, soon bestowed the character of a science upon political economy; and its application to the investigation of morbid actions has already proved so successful, that the doctrine of averages has been not unaptly styled the mathematics of medical science. As the experience of the civil practitioner is on too limited a scale, and his observations too immethodical to warrant general conclusions, it is only by extending such observations through a series of years, and over vast masses of individuals, that correct conclusions can be attained, as well as important relations disclosed discoverable in no other way. As a test of the truth of theories, statistical investigations are of vast importance. Could all medical opinions be submitted to the searching ordeal of numbers, the substance of many a ponderous folio might be condensed upon its title-page!

At the same time it must be borne in mind, that figures are not facts—a remark that will find illustration when we come to investigate these statistics in reference to pulmonary diseases. Hence the necessity of ascertaining the correctness of the data represented by numericals. Arithmetical reasoning is of all kinds the most fallacious, for not unfrequently the error in the premises can be detected only by the absurdity of the results. "It is the easiest thing possible," says M'Culloch, "to pile figures on figures, but unless deduced from correct data, they serve only to mislead; and they do this the more easily, that they have a scientific air about them, and that most people shrink from the irksome task of examining whether tabular statements be correct or not. There is nothing in fact of which one should be so skeptical as the greater number of statistical facts and details, or with respect to which a sound and searching criticism is so necessary."

As the troops employed in garrisoning the British possessions in the West Indies form several military commands, the statistical details are investigated in the following order:—

I. *The Windward and Leeward Command.*
II. *The Jamaica Command.*
III. *The Bahamas*, and
IV. *The Honduras Command.*

The *Windward and Leeward Command* embraces various islands and possessions extending from 6° to 17° of north latitude, and from 56° to 63° of west longitude. It includes that portion of the American continent termed British Guiana, with the islands of Trinidad, Tobago, Grenada, St. Vincent's, Barbadoes, St. Lucia, Dominica, Antigua with Montserrat, and St. Kitts with Nevis and Tortola. These islands differ so materially in physical aspect, that any general description would not be sufficiently comprehensive to be applicable to the whole. Thus Antigua and Barbadoes, on the one hand, are comparatively low, barren, and rocky, with a dry climate and equable temperature; and, on the other hand, St. Lucia, Trinidad, Tobago, and Dominica, are mountainous, covered with dense forests, and intersected with deep ravines, in which the rains stagnate among a mass of decaying vegetation, thus creating a damp climate and variable temperature. To the other islands an intermediate character pertains; whilst the coast of British Guiana consists of an immense tract of level country, elevated only a few feet above the level of the sea, and presenting, during the rainy season, an almost endless succession of swamps and marshes. The leading characteristics which distinguish the climate of these regions from that of temperate latitudes are the following:—

> "1. The first peculiarity which distinguishes the climate of this command is a high temperature, a necessary consequence of proximity to the equator. The mean height of the thermometer throughout the year, is, however, rather under than above the average of similar latitudes, being only about 80½°. In none of the islands is it above 82°, or under 79°, and any slight difference in this respect results more from their geological features, or extent of cultivation, than the mere difference of latitude; as the mean temperature of British Guiana in latitude 6°, is but 80½°, while that of St. Kitts more than 12° further to the north, is 81°.
>
> "2. The next peculiarity which extends to this, as well as most tropical regions, particularly of insular situation, is great uniformity of temperature. The difference between the highest and the lowest mean range of the thermometer, is, even in the most variable of the islands, only 13°, and in some it is

not more than 4° throughout the year; whereas in Britain, it is, in most years, upwards of 30°.

"3. In this, as well as other tropical climates, there is but little change in the elasticity or pressure of the atmosphere. The extreme range of the barometer is not more than from a quarter to half an inch throughout the year, and it is not materially affected even by hurricanes; whereas, in this country its range is from 2 to 3 inches, and it varies with every slight change of weather.

"4. One of the most marked of the atmospherical peculiarities of these regions, is the large quantity of rain which falls annually, being, on the average, at least three times as much as in Britain—a necessary consequence of rapid evaporation under a tropical sun. The quantity, however, varies materially in the different colonies, according as their surface is mountainous or level, clothed in wood, or cleared and under cultivation. We have, in a subsequent portion of this report, stated the fall of rain in each colony, so far as it has been ascertained by measurement; the average quantity throughout the whole command has been estimated at from 60 to 70 inches annually.

"The rain of these regions is, however, of a very different character from that of Britain, being confined principally to two seasons of the year, termed the spring and autumnal rains, and then falling, not in gentle showers, but in torrents, which, unless in a very dry soil, or where there is free drainage, speedily inundate the surrounding country.

"5. The four seasons of temperate climates, are therefore represented by two wet and two dry seasons; but as the rains follow the course of the sun, it is obvious that the period of their commencement and duration must vary according to the proximity of the settlements to the equator. In Guiana, the most southerly, the spring rains generally extend from December to January, the autumnal from May to August, while in the most northerly of these settlements the former does not commence till April or May, and the latter extends from October to December.

"In many of the islands, particularly the less hilly ones, there is scarcely any deposition of dew, and in the others it is generally scanty, except in densely wooded districts.

"6. In regions exposed to such a high temperature, it is fortunate that the heat of the day is generally modified by a sea breeze, not of that variable character which prevails in temperate climates, but which blows with nearly uniform force, and from one direction, during nine months of the year. It is termed the trade wind, and generally comes from the east and its collateral points, except from August to December, when it veers round, and blows slightly from the south and west, with frequent calms at intervals.

"While this trade wind prevails during the day, a land wind, in all the large and mountainous islands, blows with almost equal regularity at night; for as soon as the sea breeze dies away, the hot and rarified air of the plains, ascending to the mountain tops, is there condensed by the cold, and flows in a steady current towards the ocean, to supply the equilibrium of the atmosphere. In the smaller islands, and those in which there are no mountains, there is either no land wind, or it is very slight. The sea breeze generally sets in between 10 and 11 A. M.; blows with increasing force till 3 P. M., and dies away about sunset, when, after a short interval, the land wind commences, and continues till sunrise.

"In these and some other tropical regions in similar latitudes, hurricanes are occasionally experienced between the month of August and latter end of October; hence denominated the hurricane season. Trinidad, Tobago, and the settlements to the south, have hitherto been exempt from them, but they sometimes fall with dreadful violence on the other islands. Barbadoes, in particular, has suffered very severely from their ravages.

"During the rains, particularly at their commencement and termination, thunder and lightning are very common, but seldom occur at any other period of the year. Unfortunately little has been done to investigate the electrical condition of the atmosphere in these parts of the world, and therefore we can only estimate the presence of that agency from its visible effects at these periods." p. 4.

The annual mortality among the white troops in this command, during the last twenty years, is 93½ per 1000 of the strength; or, in other words, about an eleventh part of the force died annually. This ratio of mortality, however, is considerably lower than that of the previous fourteen years, terminating with 1816. It was then 138 per 1000. As the mortality among the same class of troops in the United Kingdom, during a long series of years, is only about 15 per 1000, the comparative insalubrity of this climate is shown. It further appears that among every 1000 white troops, there have been annually admitted into hospital 1903, so that, on an average, every man must have been under medical treatment about once in every six months and a half. This proportion is just twice as high as in the United Kingdom. But the difference in the ratio of severity among the cases treated is still greater; for in the West Indies, there is one death in every 24 admissions, whilst on the home station there is only one in every 67 cases.

In the Windward and Leeward command, the class of febrile diseases comprises more than a third of all the admissions, and about a half of all the deaths; and compared with the same diseases among troops in the United Kingdom, the ratio of admissions is ten times, and that of deaths twenty-five times higher. About two-fifths of the fever admissions are intermittents, which seldom prove fatal. In the low marshy settlements of Demerara and Berbice, the annual number of cases is frequently equal to the whole force employed! In other stations, however, they are comparatively rare, and in some almost unknown.

Eruptive fevers are so exceedingly rare in this command that, in the period of 20 years, only 13 have been attacked, and but one died among all the white troops.

The mortality from diseases of the lungs is high. As the Reporter, from his statistical results, arrives at the conclusion that it is "*by no means likely that any beneficial influence can be exerted by climate itself*" in pulmonary affections, this subject will, in the sequel, engage special consideration. In the progress of our review, we will, therefore, make such quotations as will fairly express the views of the Reporter, reserving our remarks to the conclusion. Thus—

> "Though the proportion of admissions by this class of diseases is lower than among troops in the United Kingdom, in the proportion of 115 to 148, the ratio of mortality is much higher, as nearly 10½ per thousand of the strength have been cut off annually; whereas in Britain the deaths from the same class of diseases do not average, at the utmost, more than 8⅓ per 1000. This arises from the greater prevalence of consumption; for, out of an aggregate strength of 86,661, serving in the Windward and Leeward Command, not fewer than 1023 were attacked by that fatal disease, being 12 per 1000 annually, while out of an aggregate strength of 44,611 dragoon guards and dragoons serving in Great Britain, only 286 were attacked, being about 6⅓ per 1000. Not only is consumption productive of great mortality in this command, but inflammation of the lungs, and chronic catarrh are nearly twice as prevalent and twice as fatal as among troops in Britain, thus showing how little effect a mere increase of temperature has in modifying these diseases."

We would premise here that the Reporter's conclusions, which show "a striking contradiction to the popular idea" in reference to pulmonary diseases, are founded in error. We will show that not only are the inferences deduced from his numerical results, in many instances, unwarranted; but that a radical error pervades the mode of investigation adopted. We agree with the author that pulmonic lesions, as regards the *annual* ratio, are more prevalent in certain *systems* of climate in southern than in northern latitudes; but when we come to investigate the question in relation to the relative influence of the *seasons*, the general opinions in regard to change of climate in pulmonary affections, maintained since the days of Hippocrates, will be triumphantly established.

Hepatic affections, although by no means so prevalent as in the East Indies, yet are nearly thrice as rife as among the troops in the United Kingdom, and five times more fatal. The general impression is that this class of diseases has an intimate connection with tropical temperature; but, on comparing the average of all the West India commands with the ratios given by England, Canada, the Mediterranean stations, and the United States, it is not found, on making some allowance for the circumstance that the white troops in the West Indies are from northern climes, that this class of diseases is much influenced by temperature.

The class of *Gastric and Intestinal affections*, among the white troops, is a most fertile source of sickness and mortality. The proportion attacked annually is 421 per 1000, whilst in England it is only 95; and in the former, the mortality is 21 per 1000—a ratio forty times as high as among troops at home. The principal source of this mortality is chronic dysentery, one-fifth of the cases proving fatal. Gastritis and enteritis also prove extremely severe in their character, and fatal in their effects.

The *Diseases of the Brain*, under which class are included inflammation, cephalalgia, coup de soleil, hydrocephalus, apoplexy, paralysis, epilepsy, fatuity, mania, and delirium tremens, appear at first sight to be very prevalent and fatal, the ratio of admissions and deaths being four times as high as in Great Britain; but as more than half of these cerebral affections have resulted from *delirium tremens*, it seems that this class of diseases is not very much influenced by high temperature. These results are confirmed by the statistics of the United States' Army, which show that the vice of inebriation may be indulged in our northern states, as contrasted with the southern, with comparative impunity.

Dropsies.—The ratio of admissions and deaths by this class of diseases, which are mostly the sequences of fevers, is very high. Compared with England, it is nearly as eight to one.

In the other classes of diseases, little worthy of remark is presented. A fact deserving of notice is the rarity of admissions under the head of venereal diseases; and this is particularly striking, from the circumstance, that, although the ratio of ulcers on all other parts of the body is nearly thrice as high as in Britain, the average of those on the genitals is eight times lower. As there are no police regulations on this subject in the command, and, as the ratio of venereal cases in the East Indies and the Mauritius is greater even than in England, it follows that this exemption arises from some peculiarity of the climate unfavourable to the existence and propagation of the disease.

Having noticed the more important facts in regard to the white troops in the windward and leeward command, we shall now take a glance at the results furnished by the black troops and pioneers. As we possess no exact statistical records of the mortality of the negroes in their native country, it is difficult to determine the influence of other climates on their constitutions. So far as statistical inquiries have extended, it seems that in no country does the mortality among the indigenous civil inhabitants, between the ages of 20 and 40, exceed 15 per 1000 annually. Among the corps of the Cape of Good Hope, composed of the aboriginal inhabitants of Southern Africa, it is only 11 per 1000; among the Bengal native troops it is the same; and among those of Madras it does not exceed 13 per 1000. In the West Indies, the mortality of the black troops, who "are for the most part natives of the interior of Africa," is 40 per 1000. The same liability to a high ratio of mortality seems to affect the blacks wherever they may be employed, as in the Mauritius, Ceylon, Gibraltar, and even at Sierra Leone on the sea-coast of their own continent. In Ceylon, they soon become extinct! The constitution of the negro would seem, therefore, to be little fitted to assimilate itself to foreign climates.

The class of febrile diseases which prove, in this command, the fertile source of inefficiency and mortality among the white troops, exerts comparatively little influence upon the blacks. Whilst the annual ratio of mortality per 1000 of the mean strength from this cause is 37 among the whites, it is less than 5 among the blacks. On the other hand, eruptive fevers, especially small-pox, are very fatal to the latter.

Diseases of the lungs are not so prevalent as among the whites; but, owing to the more fatal character of consumption and inflammation of the lungs, are productive of greater mortality. The fatal influence of these affections is apparent in every climate in which they have been employed. In this command, upwards of two-fifths of all the deaths among the negro troops have arisen from this class of diseases.

This class of troops suffer but little from hepatic affections. Gastric and intestinal affections, too, are only about one-third as fatal as among the whites, and about one-fifth as prevalent, but they induce upwards of a sixth of the whole mortality.

In the narrow limits to which our remarks are confined, we can merely direct attention to the more prominent facts. Much less then are we enabled to follow up the details comprising the divisions of this command.

British Guiana is a vast flat, consisting of a deep alluvial soil. The climate is distinguished for its extreme moisture, 157 inches of rain having fallen in a single year. Among the white troops the annual mortality is 84, and among the blacks 41 per 1000. *Trinidad*, in its physical aspects, presents a striking contrast to the low lands of Guiana. Its mountains rise 3000 feet above the sea, broken into the most abrupt forms, and clothed to their summits with majestic forests. Among the white troops the ratio of annual mortality is 106, and among the blacks 40 per 1000. *Tobago* is also of a mountainous character. The average mortality among the white troops is 153, and among the black 34 per 1000 *annually!* Amongst the causes of mortality, fevers stand first; next, gastro-intestinal affections; and, thirdly, pulmonic affections. *Grenada* is a small island with mountains 3000 feet. The mortality among the white troops is 62, and among the black 28. *St. Vincent* is another small island, with a central mountain 4000 feet in height. Among the black troops, the ratio of mortality is 36, and among the white 55. *Barbadoes*, which exhibits little of that exuberant vegetation which characterizes the other islands of this command, rises by a succession of terraces to the height only of 1100 feet. The mortality among the white troops is 58, and among the black

46 per 1000. In *St. Lucia* the ratio of mortality among the troops is as follows:—whites 122 *per mille per annum!* blacks 42 ditto! *Dominica,* which is apparently of volcanic origin, has a bold range of rugged mountains rising to the height of more than 5000 feet intersected by deep ravines. The mortality of the whites is 137, and that of the blacks 40! In *Antigua* and *Monserrat* the ratio of the former is 41, and the latter 29. All these calculations are made on an average of 20 years. The malignant influence exercised by these islands, on European constitutions, is manifested in different forms. Thus Tobago is most remarkable for fevers; Barbadoes for affections of the lungs; Dominica for those of the brain and the bowels; Grenada is most noted for diseases of the liver; and Trinidad for dropsical affections.

The Jamaica Command constitutes the second division of this report. This island is 170 miles in length, by 50 in breadth. A range of mountains from 7000 to 8000 feet in height runs throughout its whole length, forming a complete barrier between the north and the south sides of the island. On approaching from the south, the immense mass of the Blue Mountains bursts at once upon the view—their summits a succession of abrupt precipices—their lower range crowned with wood and sloping down to a plain, from eight to twelve miles in breadth, along the coast, on which the principal towns and largest military stations are situated. On the north side, as the ground rises at once from the sea by a succession of acclivities, separated by wide valleys, there are few plains or level surfaces of any extent. The lower hills, which are conical, are studded with thick groves of the pimento tree; but these features gradually become bolder in their outline until they join the high range in the centre of the island, which are covered with immense forests of cedar. The interior of the island presents the features peculiar to a highland district, in some parts rugged and densely wooded, in others spreading out into a wide expanse of table land or elevated plain.

"As these portions of the island present varieties in physical aspect, so they exhibit a corresponding diversity in climate. On the plains or sea-coast of the south side, the thermometer at noon does not vary more than 8° or 9° throughout the year; its greatest height being about 92°, and its lowest 83°. The mid-day heat on both sides of the island is greatly modified by the influence of the sea-breeze, which generally sets in from the eastward about 8 or 10 o'clock in the morning, increases in force till about 2, and declines with the sun, till, on the approach of evening, it is succeeded by the land wind from the mountains. When these winds become less regular, or altogether fail, as is sometimes the case before the rainy season, the atmosphere is exceedingly oppressive to the feelings, though the thermometer perhaps exhibits but little change in the temperature.

"The quantity of rain which falls throughout the year is about 50 inches, and the seasons may be distinguished as follows. From the middle of December to the middle of April, there is generally clear dry weather, except a few showers at Christmas. During the first three months of this period north winds prevail, with considerable diminution of temperature, the thermometer sometimes sinking so low as 70° in the morning, but by mid-day it generally stands at from 83° to 85°; the sea breezes at this time are weak and irregular. About the middle of April the sea breeze fails altogether, the thermometer rises to about 86° at mid-day, and is seldom below 80° at night; the heat becomes oppressive, the atmosphere cloudy, and a few transient showers begin to usher in the spring rains, which continue with great violence during most part of May, and are generally preceded by heavy storms of thunder and lightning. The weather in June is generally hot and dry, the sky is seldom obscured by a cloud, the thermometer often rises to 92° at noon, the land wind fails, and the nights are consequently oppressive; but the sea breeze is strong, and tends greatly to moderate the intensity of the heat. Very little change is perceptible throughout July or August, but in September there is the same close sultry weather as in April, which continues till the autumnal rains set in, about the middle of October. These are generally preceded by thunder and lightning, though not to so great an extent as in spring, and continue from four to six weeks, during which period the temperature undergoes a reduction of about three or four degrees by day, and six or seven by night.

"From July to October are the hurricane months in this island, but fortunately these phenomena are of rare occurrence.

"The seasons on the north side of the island are somewhat different, the rains being generally a month later in their commencement, and much longer in their duration than on the south side, a greater quantity also falls, and the showers are more equally distributed throughout the year. Owing to the vicinity of the mountains, and there being little extent of level ground, the atmosphere is cooler in winter, and more liable to sudden alternations of temperature." p. 42.

As the elevation of the lands in the interior of the island produces a corresponding modification of temperature, almost every variety of climate is found. At a height of 4200 feet, the range of the thermometer is from 55° to 65°; and in winter, it falls even as low as 44°. Here the vegetation of the tropics gives place to that of temperate regions; and here, while yellow fever cuts off its thousands annually along the coast of the island, a complete immunity from the pestilence exists. It was long since determined by Humboldt that yellow fever is not found above the height of 2500 feet—one of the strongest proofs that the disease is not propagated by contagion, and that it requires a high temperature for its development. In these elevated regions, the inhabitants exhibit that ruddy glow of health which marks the countenance in northern climes, and forms a striking contrast to the pallid and sickly aspect of those that dwell along the coast.

The annual ratio of mortality among the white troops in the Jamaica Command, according to the Medical Returns, is, on an average of 20 years, 121 per 1000; but when we come to include certain omissions, the ratio is as high as 143! As the average mortality during the 13 years preceding 1817, is about the same as since, it seems that the climate has experienced no amelioration. Among the black troops, the mortality is only 30 per 1000.

From *fevers* alone the annual ratio of mortality is among the white troops, 102 *per mille*, whilst among the blacks it is only 8. The fatal bilious remittent fever is much more prevalent in this command than in the Windward and Leeward command. These epidemics spare neither age, sex, nor condition in life. The temperate and the intemperate, the prudent and the thoughtless, fall victims in nearly an equal degree. Their appearance is not confined to any particular season; and all sanatory precautions, save the removal of the troops from the locality, are of no avail in arresting their progress. In regard to *Febris icterodes*, a very arbitrary distinction obtains; for, although hundreds of cases occurred in which patients died of black vomit, yet all, with the exception of 20 cases, are reported under the head of "remittent." The Reporter observes that "unlike the yellow fever of Gibraltar, one attack of the remittent fever of this country secures no immunity from a second." In our own country, at New Orleans for example, one attack of yellow fever is considered a safeguard against a second.

Eruptive fevers are so rare in this command, that among the white troops in the whole course of 20 years, only seven cases are reported.

Diseases of the *Lungs* are about one-third less prevalent, and one-third less fatal than in the Windward and Leeward command. Upon this subject, we shall make another extract, reserving our comments for a fitting time.

> "As an instance how much more prevalent consumption is in that country than in Britain, we may state that of an aggregate strength of 51,567, serving in Jamaica, there have been 661 treated for that disease, being at the rate of 13 per 1000 annually; while out of an aggregate strength of 44,611 dragoon guards and dragoons, serving in the United Kingdom, there have been treated only 286, or between 6 and 7 per 1000 annually, and that, too, though the period over which the latter observations extend, includes two severe epidemics of influenza, which, no doubt, laid the foundation of more cases of this disease than usually occur in this country.
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> "The baneful influence of the climate of the West Indies in accelerating the progress of consumption, has been often remarked by the medical authorities; but it does not seem to have occurred to them, nor indeed had they any means of ascertaining, that at least twice as many cases of it originate in that climate as at home, though those catarrhal affections to which they are generally attributed are there comparatively so rare." p. 47.

The ratio of diseases of the *Liver* is only half as high as in the Windward and Leeward command. Considering the high degree of temperature in this island, it will seem strange that the ratio of admissions, compared with troops in Britain, is only as 10 to 8, and the deaths as one to $\frac{4}{10}$ths.

Under the class of the diseases of the *Stomach* and *Bowels*, the ratio of admissions into hospital is only about one-half, and the deaths scarcely one-fourth as high as in the Windward and Leeward command. As dysentery and diarrhœa, in particular, assume a mild and tractable form, the Reporter is disposed, with good reason, to ascribe much to the circumstance that instead of salt meat, much fresh provisions are supplied.

Diseases of the Brain.—If we exclude from this class the admissions and deaths arising from ebriety, the averages are not much higher than in Great Britain.

Did space permit, it would be interesting to follow the Reporter in the details of his investigation of the relative salubrity of the different military stations of this island, the general results of which have just been brought under notice. Whilst the annual mortality of the post of Maroon Town, situated in the interior of the island, and elevated more than 2000 feet above the level of the sea, is only 33 per 1000, at Montego Bay, on the coast, the ratio is as high as 179, and at Savannah la Mar, it is even 200. As many of the deaths at Maroon Town originated from disease contracted at other stations, the actual mortality does not exceed that of the Foot Guards in London. Whilst some of these mountain stations are very salubrious, yellow fever being there unknown, at Montego Bay it sometimes became necessary to withdraw the troops in consequence of there being none left fit for duty. At Up-park Camp, in 1819 and 1822 nearly a half, in 1825 a third, and in 1827 about a fourth of the garrison were swept off. At Spanish Town, "on no less than seven different occasions, between a fourth and a fifth part of the whole force was cut off in the course of the year, and in 1825, the ratio of mortality amounted even to two-fifths of the strength." At this post, the annual mortality from fevers alone, on an average of 20 years, is 141 per 1000 men.

Bahamas.—This command consists of several hundred islands of various magnitude, extending nearly 600 miles. The most important of the group is New Providence, at which island the troops are principally quartered. The number of white troops is so limited that the Reporter does not make the usual deductions. Among the white troops the annual mortality is 200 per 1000, and among the black it is only 41. Among the former, four-fifths of the deaths arose from fevers, mostly of the remittent type. From this disease, one in 5 of all the white troops attacked died, whilst of the blacks there died only one in 50.

Honduras.—This settlement lies on the southern portion of the North American continent. The annual mortality of the white troops, very few of which were stationed here, is 103 *per mille*, and that of the blacks, 30.

Having completed all the details of the West India commands, the Reporter proceeds to consider several subjects of a general nature. In the section on the number constantly sick in hospital, it is shown that out of every 1000 white troops there are 87 constantly ineffective from sickness in the Windward and Leeward command, and only 63 in Jamaica, notwithstanding the latter is far more unhealthy.

> "This peculiarity arises from four-fifths of the mortality in Jamaica being caused by fevers which rapidly terminate either in death or recovery, and only one-fifth from lingering diseases, such as those of the lungs and bowels; whereas in the Windward and Leeward command, scarcely half of the deaths are caused by fever, and almost all the others by diseases which detain the patient long in hospital. From this it will be understood how, during the ravages of epidemic fever, there may be a very great mortality without the hospital being much more crowded than usual."

The section on the influence of age and length of residence on the mortality among troops serving in the West Indies, is very interesting. Instead of the mortality decreasing with advance of age, as has been the general impression, it increases with infinitely greater rapidity than in England. The prevailing idea in regard to the advantages of seasoning or acclimatization, is opposed to numerical results. In Jamaica, for example—a station in which the strength is usually kept up by young recruits, varying from 19 to 21 years of age—the annual ratio of mortality among soldiers between the age of 18 and 25, is 70 per 1000, between 25 and 33, 107, between 33 and 40, 131, and between 40 and 50, 128 per 1000. Now, if the conservative powers of the constitution acquired strength by length of residence in unhealthy climates, the reverse ought to be the case. Similar results have been uniformly observed in all other stations, both in the torrid and the temperate zones.

In the section on the mortality and diseases of the officers serving in the West Indies, it is shown that the proportion, compared with the troops generally, is only about half as high. The only class of diseases by which officers suffer more than privates, is that of the liver. From diseases of the lungs and the bowels, officers enjoy a very marked exemption.

> "If one class of men is found to suffer more from diseases of the bowels than another, when there appears nothing in their duty or employment to create such a difference, we are naturally led to inquire into the nature of their diet; and on

ascertaining from the result of 20 years, that in the one command, where, for five days in the week it has consisted of salt provisions, the mortality by that class of diseases has been nine times as high as among the officers, while in the other, where but two days' salt provisions have been issued in the week, the mortality of these two ranks approximates so nearly as to be almost on a par, we are led to the conclusion that this cause is likely to have had some influence on the prevalence and fatal character of these diseases in the Windward and Leeward command." p. 99.

The comparative exemption of officers from diseases of the lungs, is another remarkable result. The mortality from this class of diseases among the troops is 4 or 5 times greater than among the officers—a circumstance the more unaccountable, as recruits undergo a careful examination at their enlistment. As consumption in this class of diseases is the principal source of mortality among the troops, it would seem that their great susceptibility to this malady cannot be ascribed to climate alone. As it has been demonstrated by experiment by Sir James Clark, that innutritious food and confinement in close humid places will develop tubercular affections in animals, the Reporter is led to the inference that a restriction to salt diet and confinement in crowded barrack-rooms, particularly in a tropical climate, may produce on the soldier similar effects—a condition from which the officer is exempt. The difference has been attributed by some to intemperance and exposure to night air; but to this it is replied, on the one hand, that in the East Indies, where the soldier undergoes similar exposure, the mortality is only one-fourth as great; and, on the other hand, that the non-commissioned officers, who are much less addicted to the vice of intemperance than the private soldier, suffer even a greater mortality. Hence it is inferred that the comparative exemption of the officer can be attributed neither to his non-exposure nor superior temperance. But more of this anon.

The sixth and last section contains the deductions from the preceding data. We think the reporter rather unfortunate in his conclusions, which seem to have little practical tendency. He combats the opinion that the diseases which prove so fatal to Europeans in these latitudes, especially fevers, arise from continued exposure to a high temperature. Now who, at the present day, maintains the doctrine that intermittent or remittent fever is ascribable to the agency of mere temperature? If heat alone were sufficient, these diseases would be most prevalent in the deserts of Africa. On the contrary, they are there unknown; but as we approach the Nile, where the air is moist, and the soil abounds in organic remains, they become exceedingly rife and fatal. In like manner, in our southern regions, every white man, Indian, and negro, is aware that whilst he is peculiarly subject to these diseases along the margins of streams, lakes, and marshes, he is exempt in the adjacent sandy pine woods. The British army statistics, however, prove that in proportion as the equatorial regions are approached, do febrile endemics become more prevalent and fatal—a law that is beautifully illustrated by the fact that the "sickly season" in positions north and south of the equator, in consequence of the seasons being reversed, occurs at periods precisely opposite. In the statistics of the United States' army, too, the influence of temperature in the production of intermittents and remittents is clearly demonstrated. In our southern latitudes, the annual ratio is about five-fold greater than in the northern;

and between the low temperature of the first quarter of the year and the exalted temperature of the third, a contrast equally marked is observed.

That "excess of moisture" constitutes the essential cause of the fevers of the West Indies, the reporter regards as an untenable hypothesis.

> "If the mortality of the troops depended materially on the influence of moisture, we might expect it to attain its maximum in those stations where the fall of rain was the greatest; whereas, the average mortality of the troops in Jamaica is at least double that which prevails among those in British Guiana, though the quantity of rain which falls in that island is little more than half as great."

We are not aware that febrile epidemics are ascribed to mere moisture. The Reporter does not here distinguish between the moist and the rainy season, nor does he attend to the conditions most favourable to the evolution of miasmata. To submerge completely marshy lands, it is well known, is one of the means of obviating their insalubrity. Animal and vegetable decomposition is regulated by the degree of heat and moisture combined. If moisture is increased until the air is excluded from the vegetable matter, decomposition is suspended; and the same effect is induced if the temperature is reduced to the freezing point, or increased until all moisture is dissipated. In the operation of heat and moisture there is then a wide distinction; for the former acts in proportion to its intensity, whilst the latter may prove unfavourable to the generation of malaria, no less by excess than by deficiency. We do not pretend to define the precise nature of *marsh poison*, but one fact is evident, viz: that a marshy soil, previously submerged, exposed to the action of solar heat, will develope that mysterious agent called *malaria;* and we know from experience that marshy districts in almost all countries are the *foyers* of disease, and that the deltas of large rivers are apt to teem with malarious emanations.

Again, it is alleged that the unhealthy character of these colonies cannot be accounted for by exhalations or emanations from the soil, because while the soil and its physical characters are the same in every year, the sickness and mortality are extremely variable. Now it is vain to argue from the effects of a single cause, when we admit that febrile endemics are produced by a concurrence of causes acting constantly or periodically in certain localities. Indeed the Reporter acknowledges that heat and moisture *conjoined*, although not the primary causes of fever, yet tend to increase its intensity.

These documentary reports contain a great mass of valuable information; and however we may disagree with the compiler in regard to his deductions, the facts themselves will stand unchanged, and these data will continue a source of reference to the medical philosopher when all such crude inferences shall have been long forgotten. That the duty of compiling these reports, founded on official medical documents, should have been delegated to a captain in the army destitute of professional knowledge, seems indeed strange. Although it is acknowledged that Captain Tulloch has performed the task with great ability, yet the members of the medical department of the army have just cause for expressing dissatisfaction. In the preparation of the subsequent reports, especially the medical details, the compiler acknowledges his indebtedness to the "same parties," (a deputy inspector-general of hospitals and a staff-assistant surgeon,) whose names, instead of being associated as co-editors, are buried in the smallest type of a foot-note.

The second volume of Statistical Reports is investigated in the following order:—

I. *On the Sickness, Mortality, and Invaliding among Troops serving in the United Kingdom.*
II. *Among those serving in the Mediterranean stations.*
III. *Among those serving in British America.*

I. *The United Kingdom.*—To form a just estimate of the influence of different climates on the health of troops abroad, it is requisite to determine, in the first place, their liability to sickness and mortality at home. As the troops are passing continually to and from foreign service, the Reporter, to obtain correct results, has been obliged to confine his observations principally to those regiments of cavalry which have not been serving abroad during the period embraced in this report, and the Household Troops whose service is for the most part confined to the duties of the metropolis.

Contrary to what we find in the colonies, troops at home are seldom employed on any duty not strictly military. Fatigue and working parties are rarely necessary, "and, with the exception perhaps of occasional night duty, there appears nothing in the nature of their occupations likely to operate prejudicially to health. It may safely be affirmed that they are at least better lodged, better fed, and have less onerous duties to perform, than the great mass of the labouring population." That the mortality of the soldier, who is carefully examined at his enlistment in reference to physical defects, should be lower than that of the civilian, might be readily inferred. This is not, however, the case, at least to the extent anticipated.

Among the dragoon guards and dragoons, whose average age is from 29 to 30, the annual mortality from all causes is $15\frac{3}{10}$ per 1000. Now, by the Carlisle tables, which exhibit the mortality of England in the most favourable light, the number annually decreasing out of a thousand of that age, would be about 10. By Mr. Finlaison's observations, deduced from the duration of life among the government annuitants, it is about 13. The mean of these is $11\frac{5}{10}$, which corresponds very nearly with the ratio deduced from the population returns. At first sight, this would indicate that the military profession, even under the most favourable circumstances, operates prejudicially to the human frame; but it is accounted for by the great difference between the mortality in populous towns where the troops are generally quartered, and that of rural districts, on which the above calculations as to the duration of civil life are principally founded. It is shown that the mortality of the principal towns in the kingdom is nearly one-third higher at the prime of life than among the rural population. As the civil population of these towns, even between the ages of 20 and 30, is estimated at 16 per 1000, it follows that the apparent high ratio among the troops as compared with the general mass of the population, arises not so much from any deteriorating influence in their profession, as from the disadvantage of their being subject to the insalubrious atmosphere of densely populated districts.

The admissions into hospital among the dragoon guards and dragoons, amount, on an average of 7 years, to 929 per 1000, annually. The extent and duration of sickness among the working classes have frequently engaged the attention of the British legislature. Among the workmen in the government dock-yards, the ratio of attacks of sickness among every 1000, in the course of the year, is only 407. But this striking disproportion is more apparent than real. It arises principally from the circumstance, that among soldiers every case of disease which comes under treatment, however slight, is entered on the hospital books as an admission, whereas in the dock-yards or among the working classes generally, cases are only recorded when of so serious a nature as to create an absolute disability for labour. Besides, the loss of wages consequent on such an occurrence must have a powerful tendency to reduce the number absent from sickness. With regard to the admissions into hospital among the troops, it is found that nearly two-thirds of the whole are of that class which seldom proves so serious as to incapacitate a person for the labours of civil life.

The prevalence of suicide among the dragoon guards and dragoons is truly surprising. Out of a total of 686 deaths, no less than 35, or upwards of one in 20 of the whole, have arisen from this cause, independent of many attempts which did not prove fatal. This ratio is more than five times greater than the proportion of suicides insured in the Equitable.

"This extreme tendency to self-destruction in the army will be best estimated by a comparison with the proportion of suicides in civil life in different countries, as stated by a recent statistical author.

In France	there is annually	1	suicide to	18,000	inhabitants.
Prussia	" "	1	"	14,404	"
Austria	" "	1	"	20,900	"
Russia	" "	1	"	49,182	"
In state of New York	" "	1	"	7,797	"
In Boston	" "	1	"	12,500	"
Baltimore	" "	1	"	13,656	"
Philadelphia	"	1	"	15,875	"
Dragoon guards and dragoons in the United Kingdom		1	"	1,274	

"In cities, where a large proportion of the military are quartered, the ratio of suicides is greater than in the whole population of a country, but still much below that among our troops. In the department of the Seine, (Paris,) for instance, between 1817 and 1825, the suicides averaged annually

			1 in 2,400	inhabitants.
In Berlin,	from	1813 to 1822,	1 in 2,941	"
Geneva,	"	1820 to 1826,	1 in 3,900	"
London,	"	" " "	1 in 5,000	"

"Even assuming, however, the very highest average in civil life in this country, it would appear that suicides are at least five times as numerous among this class of the military. It is necessary, however, to keep in view, that instances of self-destruction rarely occur among persons under the age of 18, and are by no means so frequent among females as males—circumstances which must materially influence any comparison between its prevalence among a population of all ages and sexes, and a select body of troops from 18 to 40 years of age."

What a commentary is this on the *morale* of the army! The principal causes are the two following:—Those who fill the ranks are mostly such as have proved themselves unfit for the trusts of civil life—and the hopeless nature of the service, all enlistments being for an *unlimited* period. The higher ratio of suicides among the dragoon guards and dragoons is doubtless owing to the circumstance that these corps contain more of that class who have by dissipation or extravagance reduced themselves from a higher sphere in life to the necessity of enlisting.

The Foot-Guards.—The annual mortality of these troops, on an average of seven years, is 21$\frac{1}{10}$ *per mille*, being nearly one-half higher than the dragoon guards and dragoons. This is the more remarkable, as the climate of London is not more insalubrious than many of the other towns in which troops are quartered throughout the kingdom. The average annual mortality of the civil population, between the ages of 20 and 40 is under 15 per 1000, and that of the East India Company's labourers employed there is as low as 12$\frac{4}{10}$ per 1000 at the same period of life.

This excess of mortality among the foot-guards, compared with the other troops of the metropolis, arises entirely from diseases of the lungs.

> "It would appear that this high ratio of mortality, by diseases of the lungs among the foot-guards, is not a necessary consequence of residence in the metropolis, but rather originates in some peculiarity in the moral or physical condition of that description of troops, from which the others are comparatively exempt." p. 10.

Thus, by calculations deduced from the London Bills of Mortality, it has been determined that, out of 1000 deaths among the civil population, scarcely one-third of the whole arose from diseases of the lungs; whereas, among the foot guards, out of 745 deaths, upwards of two-thirds were from this class of diseases. The ground here taken is confirmed by the results afforded by the class of troops now to be investigated, viz:

The Household Cavalry.—The annual mortality of this class of troops is 14$\frac{5}{10}$ *per mille.* Although exposed to the climate of the metropolis, the mortality is not so high by at least one half as among the foot guards; and, compared with the cavalry corps employed throughout the kingdom, it is even lower. While, among the foot guards, the mortality from diseases of the lungs has averaged 14$\frac{1}{10}$ per 1000 annually, among this class of troops it has been but 8$\frac{1}{10}$. "That the exposure of the foot guards," says the Reporter, "in a greater degree on night duty, will scarcely account for this difference, may readily be supposed from the fact that even among troops of the line serving at home, whose constitutions have in some instances been deteriorated by residence in tropical or unhealthy climates, and who have an equal share of night duty to perform, the mortality by diseases of the lungs is much lower."

The reporter now proceeds to determine general results, as a fair standard for estimating the relative mortality by the same diseases among troops in the colonies.

Fevers.—The proportion of deaths annually by this class of diseases, taking the average of dragoon guards and dragoons, the foot guards, the household cavalry, and civil life, is 1$\frac{6}{10}$ per 1000. It is further ascertained that fevers are more prevalent during the summer than the winter months, in the proportion of 5 to 4.

Eruptive Fevers.—This class of diseases, once a source of great mortality in the army, is now of rare occurrence. The annual mortality is not more that two out of every 10,000.

> "It may be necessary to state, that, by the regulations for the management of regimental hospitals, the surgeon is called upon to report half-yearly, that every man, woman, and child, belonging to the regiment, bears unequivocal marks of either small or cow-pox, and he is directed to keep a register of the names and appearances, on the days of examination, of all patients vaccinated. Nothing shows the advantage of this precaution better than the fact that, in the dragoon guards and dragoons quartered throughout the kingdom, only one soldier has been attacked by small-pox in every 2000 annually." p. 12.

Diseases of the Lungs.—The annual mortality from this class may be stated at 8 per 1000, exclusive of the foot guards, which are regarded as an exception.

> "The rarity of recovery from consumption is strikingly exemplified in the fact, that, of 286 admissions among the dragoon guards and dragoons, 236 are ascertained to have proved fatal, and the remaining 50 are more likely to have consisted of re-admissions than recoveries.
>
> "Nearly four-fifths of the fatal cases of diseases of the lungs arise from consumption, being as many as from all other causes in the army at home. The highest estimates in civil life rate the mortality from this disease at a seventh part of the deaths of all ages; or, if the observation is confined to adults alone, it may possibly amount to a fourth part, being at the utmost only half as high as among the troops.
>
> "That soldiers should suffer so much from this disease is remarkable, as an active life, spent for the most part in the open air, has generally a very material tendency to counteract its influence." p. 13.

Diseases of the Liver are of very rare occurrence, and productive of little mortality.

Diseases of the Stomach and Bowels also induce little mortality, the annual average being only 5 per 10,000 of the strength. It is worthy of remark, that, notwithstanding in many of the colonies the mortality from this class of diseases is not only higher than in civil life, but in some cases even as high as by all the diseases in civil life together, in the United Kingdom it is even less than among the most select of the population.

Epidemic Cholera.—The annual mortality, during the three years that it prevailed, was about $2\frac{1}{10}$ per 1000 of the strength. It seems to have exerted its fatal influence with undeviating regularity in all localities, the ratio of deaths being the same within a fraction throughout the kingdom. The mortality, however, increased progressively with the advance of age.

Diseases of the Brain.—The annual extent of mortality from this class is 8 per 10,000, being only half the proportion which occurs in civil life.

Dropsies.—The annual mortality from this source is $\frac{4}{10}$ per 1000.

On the Number constantly Sick in Hospital.—The average may be stated at 40 per 1000, which gives to each soldier $14\frac{1}{2}$ days sickness annually, whilst the average duration of each attack is sixteen days. On a comparison with the results given by benefit societies, dock labourers, &c., it is found that the ratio constantly sick and the number of days' sickness to each person, are more than twice as high in military as in civil life. This arises no doubt from the circumstance that, among the former, the slightest cases of indisposition are included.

On the Influence of Age on Mortality.—Among the dragoon guards and dragoons, the mortality increases progressively with the advance of age, but by no means in so rapid a ratio as in the West India stations. To this regular progression, there are some exceptions in the other corps.

On the Mortality among Officers.—Making proper allowance for the facility with which officers can dispose of their commissions in the event of bad health, the annual ratio of mortality among the officers of the household troops, dragoon guards, and dragoons, may be stated at $9\frac{1}{2}$ per 1000, being very nearly the same as among the most select class of individuals insured in the Equitable Office between the ages of 20 and 40. Among the officers of the regiments of the line on the tour of home service, during the same period, the ratio is 11 per 1000 annually.

On the influence of the seasons in producing sickness and mortality.—"Notwithstanding the large proportion of diseases which are attributed to the changeable nature of this climate, the attacks of sickness are fewest among the troops during the fogs and gloom of November, and throughout the winter they are considerably under the average, even though, from their professional duties, soldiers are much exposed to its severity; while during the months of July, August, and September, when there exists that mild and serene atmosphere which *a priori* might be supposed most conducive to health, the proportion of sickness generally attains its maximum. The same feature will hereafter be shown to exist to a still greater extent in America and other regions of the northern temperate zone." p. 21.

The unhealthy influence of the *autumnal* months on soldiers is strongly corroborated by the result of a recent investigation into the relative mortality of each month in the French army. Mons. Quetelet, a statistical author, whose attention has been drawn to this peculiarity of the mortality among troops, has been at great pains to ascertain from the population returns of Belgium, whether the same law extends to persons in civil life. As the reverse of this law is established in civil life, it is inferred that, in the army, the law results from the operation of a general cause affecting the health of soldiers.

The statistics of the United States Army, which are investigated by quarterly results, show, in the third quarter, (July, August and September,) invariably the highest ratio of morbility and mortality, in every section of the country. In the southern division, the high ratio extends more into the autumnal months than in the northern.

II. *On the Sickness and Mortality among Troops serving in the Mediterranean.*

The Mediterranean stations form three distinct military commands.

1. *Gibraltar.*—The climate of Gibraltar, notwithstanding it is dry and sultry in summer, and subject to fogs and mists throughout the year, may be characterised as healthy. During a period of five years, the greatest height of the thermometer in the shade was 91°, and the minimum 50°.

"The temperature in summer is always from 3° to 4° lower during the night than during the day—often much more; and in the morning before the sun appears above the Rock, and also towards sunset, the air is pleasantly cool and refreshing, even in the hot season. In these respects, Gibraltar enjoys a great superiority over Malta, where, though the extreme range of the thermometer is only 2° or 3° higher, there is, during the middle of summer, no perceptible reduction of temperature at night or in the morning, and the heat is much more oppressive.

"Though snow seldom or never falls, and ice is rarely formed, the cold is keenly felt during the winter months, especially by those who have been long resident on the Rock.

"The prevailing winds are from the westward and the eastward. It seldom blows from the north or south, and when from these quarters, continues but for a short time. The westerly winds are clear, dry, and refreshing; blowing directly on the town, they promote a free circulation of air, and are esteemed highly favourable to health. The easterly winds, or Levanters, as they are termed, have quite a contrary character; their baneful effects are said materially to aggravate wounds and acute diseases, and often to prove fatal to convalescents; being surcharged with moisture during their transit across the Mediterranean, they are always damp, raw, and unpleasant, and when from the southward of east, are generally accompanied with thick fogs, which envelope the Rock, and are supposed to produce the same debilitating effects as the sirocco in the upper part of the Mediterranean."

The average quantity of rain annually is 25½ inches. The rains generally commence in the end of September, or early part of October, and set in with such violence as frequently to overflow the water courses and commit great havoc in the streets of the town. The succeeding rains, which continue to fall at intervals till the end of May, are much lighter, and during the middle of summer there is seldom any, the sky is then without a cloud, vegetation becomes languid, and, unless irrigated by artificial means, generally perishes. Heavy dews and thick fogs prevail during the autumnal months, and keep up a constant dampness in the atmosphere, which renders it very unpleasant to the feelings.

The annual ratio of mortality is 22 per 1000; but in this is included the mortality occasioned by two fatal epidemics—one of yellow fever in 1828, and another of cholera in 1834. Exclusive of these, the annual mortality would not have been more than 13 per 1000. Sufficient evidence of the general salubrity of Gibraltar is afforded by the low mortality among the civil inhabitants.

Epidemic or Yellow Fever.—Among the medical officers of this station, great diversity of opinion obtains upon the question whether this disease is of local origin, and merely an aggravated form of the remittent fever, or of a contagious nature introduced by ships from foreign ports.

> "The first appearance of this epidemic, of which we possess any specific details, was in August, 1804, but till the end of September it did not become so prevalent as to call for the notice of the public authorities. It then rapidly increased till the end of October, when it reached the maximum, after which it gradually diminished in frequency and severity, and ultimately disappeared in the end of December or beginning of January. In this instance, however, it seems rather to have died away from want of subjects than from any mitigation of the causes by which it was induced—for after the most diligent inquiry, only 28 adults could be discovered within the garrison who had escaped the malady, and it very rarely attacks the same person twice. A manuscript journal of the events of that period states that neither wind, rain, nor any change of weather, had the smallest effect in checking its ravages or diminishing its malignity; about one-third of the troops who were attacked died, and of the civilians a still greater proportion. The total number of deaths during its continuance amounted to—
>
> | | |
> |---|---|
> | Officers - - - - - | 54 |
> | Soldiers - - - - - | 864 |
> | Soldiers' wives and children - | 164 |
> | Civilians - - - - - | 4864 |
>
> "We cannot state the precise number of each class so as to ascertain the ratio of mortality, but about a fourth part of the troops and more than a half of the civil inhabitants were cut-off. To the precaution of encamping the former out of town, which was adopted on the 26th of September, is probably to be attributed their not having suffered to so great a degree as the civilians who remained constantly within the garrison." p. 8.

A similar disease appeared in 1810, when only 6 died. It made its appearance again in 1813, cutting off 461 of the troops, and 883 of the inhabitants; and again in the following year, causing the loss of 114 of the military, and 132 of the inhabitants. The garrison suffered from no similar visitation until 1828, when the epidemic carried off 515 of the military, (including 83 women and children,) and 1281 civilians. In all these instances, as soon as the troops were removed to encampments on the "Neutral Ground," they became in a measure exempt, notwithstanding it continued to rage in the town. In 1813, and in 1828, the mortality attained its maximum on the 16th of October, and in 1804 about a week earlier.

"Without venturing an opinion as to whether this epidemic is one *sui generis*, or merely an aggravated form of remittent fever, there is one marked peculiarity to which it is necessary to advert. In Gibraltar the same individual has seldom been attacked twice, even though a long series of years may have elapsed since he first suffered from it, but in the West Indies, and on the west coast of Africa, a former attack of remittent fever secures no such immunity—indeed it could be proved, by reference to the returns from these stations, that in many corps every soldier must have been treated, on the average, twice or thrice for remittent fever during the few years of his service there." p. 9.

We have already remarked that at New Orleans one attack of yellow fever is believed to secure an immunity against the second. As the author makes no distinction between the bilious remittent fever of warm climates and the genuine *febris icterodes*, we do not see what bearing the fact that every soldier may have been treated twice or thrice for remittent fever, has upon the subject. In the British reports, the medical officers pursued an arbitrary classification, some considering "bilious remittent fever" a better nosological term than "yellow fever." Much of the obscurity in relation to yellow fever may arise from the circumstance that the appellation has been bestowed upon diseases entirely distinct, though resembling one another in their most striking features.

The cause of this disease at Gibraltar is still involved in much obscurity. To meteorological observations, which, for many years, were made with great care, we look in vain for a solution of the mystery. Though no marked diminution, either in prevalence or severity, could be distinctly traced to the occasional reductions of temperature which took place during the continuance of this disease, yet it may be proper to observe that these epidemics have never been known to make their appearance at this station during winter, and have always declined in severity as that season approached. It further appears that a removal, even to a small distance from the town, secured a complete immunity from the epidemic. In the present state of our knowledge, we are not justified in saying that the same miasm which produces remittent fever, can, in its more aggravated state, excite yellow fever, nor indeed that the latter is of paludal origin.

Diseases of the Lungs.—"The ratio of admissions by this class of diseases is to that in the United Kingdom as 141 to 148, the principal difference being that catarrhal affections are less frequent in Gibraltar, while inflammation of the lungs is much more so; the cases of the latter are, however, of a milder character, as only 1 in 45 died of those admitted into hospital in Gibraltar, while 1 in 18 died of those admitted for the same cause among the dragoons guards, and dragoons in the United Kingdom. The total mortality by diseases of the lungs would appear to be less at this station than at home; but that, we apprehend, arises from many of the consumptive patients being invalided, who, if they die on their passage, or after their arrival in Britain, are not included in the returns of the station where their diseases originated." p. 11.

Diseases of the Liver.—This class of diseases is, only in a very slight degree, more prevalent or fatal than in the United Kingdom.

Diseases of the Stomach and Bowels.—Compared with the results given in the United Kingdom, it would appear that this class of diseases is twice as prevalent and thrice as fatal. Salt meat, more than increased temperature, is assigned as the cause by the Reporter.

Epidemic Cholera.—In a strength of 3048, there were 459 cases and 131 deaths, being one in 3½.

"The medical officers seem to have been almost unanimous in their opinion that the disease was not contagious. In the same ward with the cholera patients in the civil hospital were several persons labouring under other diseases, who, although in constant communication with, and frequently in attendance on those suffering under the epidemic, were in no instance affected by it. In the military hospital, too, it was observed that the orderlies employed in attendance on the sick were not attacked in a greater proportion than others who were not so employed.

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"It may also be stated, as another evidence on this subject, that, of 30 medical officers in constant attendance on the sick during the prevalence of the epidemic all of whom, from the nature of their duties, were subject to great fatigue and anxiety, only one or two exhibited any symptoms of the disease, and these cases were comparatively slight. p. 14.

Diseases of the Brain.—The proportion admitted is the same as among the dragoon guards and dragoons, whilst the ratie of deaths is even lower.

Dropsies.—The ratio of admissions and deaths is exactly the same as in the United Kingdom.

Venereal Affections are exceedingly rare, the ratio of admissions being scarcely one-third as high as among troops at home. Although the strictness of the police regulations for the exclusion of all females likely to communicate these diseases, may in some measure account for this comparative exemption, yet it may be inferred that this climate, like that of the West Indies, may be unfavourable to their existence or propagation.

Black Troops.—In 1817, the Fourth West India regiment was sent to form part of this garrison, under the expectation that this class of troops would prove extremely useful in relieving the British soldiers from such duties as subjected them to exposure during the heat of the day. An experience of one year and ten months afforded, however, a striking instance of the unfitness of the constitution of the negro for any other than his native climate; for the annual ratio of mortality was 62 *per mille*, being at least four times as high as that of the European troops in Gibraltar during the same period. More than nine-tenths of the deaths arose from diseases of the lungs and the bowels.

2. *Malta.*—This island contains neither river nor lake, and has, from its geological structure and the absorbent nature of the soil, but little marshy or swampy grounds. There is no exuberant vegetation, brushwood, or forest; the verdure is scanty, and the greater part of the surface presents nothing to view but the arid rock.

"Malta, being much exposed to the influence of the hot winds which sweep over the deserts of Africa and the sandy coast of Egypt and Syria, is subject to a higher temperature, particularly during the summer months, than is usual in the latitude of that island; indeed, the heat at that period is little inferior to what is experienced in tropical regions. This high degree of temperature exists not only during the day, but, owing to the radiation of the heat absorbed by the rocky surface of the ground and the thick stone walls of the buildings, continues, with very little abatement, even after the solar influence has ceased; and sometimes, for a period of several weeks together, the thermometer maintains, during the night, the same height as throughout the day, creating thereby a feeling of extreme lassitude and oppression among all classes of residents." p. 18.

The range of the thermometer, on an average of five years, is from 52½° to 86° Fahr. In regard to the quantity of rain which falls, the Reporter possesses no data.

> "In September there are frequent showers, increasing in frequency during October and November; but from December to February the rain falls with nearly the same violence as in the tropics, and the atmosphere continues surcharged with moisture till March; it then begins to clear, and during the five following months scarcely a drop falls, and the sky is generally without a cloud.
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> "The most prevalent winds in Malta are from the southeast, south, and northwest. That from the southeast, termed the sirocco, is the most common; and the disagreeable effect it produces on the human frame is frequently adverted to in the medical reports. It prevails principally during the autumnal months. There is no regular land and sea-breeze, which, in some southern stations, serves materially to modify the temperature." p. 18.

This island seems to be less salubrious than Great Britain; for the annual ratio of mortality among the inhabitants is nearly $2\frac{5}{10}$ per cent., whilst in England it is only $2\frac{3}{10}$ per cent. But besides the mortality of ordinary years, on which the above estimate is founded, Malta, in 1813, suffered from the ravages of the plague, which cut off 4486 of the inhabitants, between April and November; and in 1837, cholera broke out, which also carried off several thousand.

Including the deaths from accidental causes omitted in the medical returns, the annual ratio of mortality among the troops is $18\frac{7}{10}$ *per mille*—a sufficient proof that the climate of Malta does not deserve the character for salubrity so generally assigned to it. We have already shown, says the Reporter, by reference to the mortality among the natives, that it is much the same, in this respect, as the other states in the south of Europe, and the extent of mortality among the troops, during the above period of 20 years, sufficiently corroborates that deduction. Notwithstanding the mortality is less than at Gibraltar, the extent of sickness is greater, the excess being principally among those diseases which seldom prove fatal.

Fevers.—The troops at this station suffered more from fevers than at Gibraltar, excluding the epidemic of 1828, and twice as much as those at home.

Diseases of the Lungs.—Having given the usual tabular view of this class of diseases, the Reporter observes—

> "The climate of this island appears from the preceding results to be by no means favourable to persons predisposed to these diseases: the mortality is higher than in Gibraltar, and there is every reason to believe that could we have taken into account the number invalided, and who died on their passage, it would have proved even higher than at home. It is somewhat remarkable that, i a climate where the thermometer never sinks to the freezing point, where the temperature at night is generally within a few degrees the same as during the day, and where those sudden transitions from heat to cold, to which this class of diseases is generally attributed in other countries, are exceedingly rare, the ratio of admissions should be only about one-fifth less than in the United Kingdom.
>
> "It may serve as a striking illustration how little influence the climate of Malta is likely to have in diminishing the tendency to consumption, that the proportion attacked by that disease among the troops there during the last seven years, has averaged $6\frac{7}{10}$ per thousand of the strength annually, while in the United Kingdom, during the same period, the proportion attacked of the dragoon guards and dragoons was but $6\frac{4}{10}$ per thousand annually. Nor is the fatal influ-

ence of diseases of the lungs confined to the troops alone; it extends in a corresponding degree to the inhabitants."

Having given a table of the pulmonary diseases reported among the civil population, the Reporter adds—

> "This total of 6664 deaths in 13 years, shows the mortality to have been 513 annually, which upon an average population of 100,000 of all ages, is about $5\frac{1}{8}$ per 1000 of the strength, being scarcely one per 1000 less than among the troops, notwithstanding the night exposure of the latter in the course of their military duties.
>
> "Though the climate of this island has been supposed favourable to diseases of the lungs, its inhabitants appear to suffer from them nearly as much as those of high northern latitudes; for the returns of Sweden show that there were only 14,087 deaths from this class of diseases out of the whole population in one year, being in the ratio of $5\frac{6}{10}$ per 1000, or within a fraction the same as in Malta."

For the present we shall merely say that these comparisons and influences are unwarranted by the data. In our concluding remarks we will show the fallacy of the comparisons in which the ratio of the United Kingdom is taken as the standard, and the still greater fallacy of the comparison between the British troops and native population. The cases of *marasmus*, which "occurred principally among children and old persons," have been included under the head of *consumption*, in the tables of the civil population of Malta!

Diseases of the Stomach and Bowels.—This class of diseases prevails to a considerable extent, but not in very aggravated forms. As in the Report of the West Indies it was stated that these affections produced comparatively little mortality either among the officers or civil inhabitants, so it was inferred that among the soldiers it was, perhaps, not so much attributable to the influence of climate as to the quality of the diet to which they were restricted. We now possess an indirect proof of the accuracy of these deductions in the fact, that in Malta, where the troops enjoy the advantage of fresh provisions, the mortality among them by diseases of the bowels does not exceed that of the civil inhabitants. Although no diet, however simple or well regulated, will secure to the soldier an entire immunity from diseases of this class when exposed to a high temperature in tropical climates; yet it is apparent that the same quantity of salt meat, which might be consumed in northern regions with comparative impunity, may, in warm latitudes, prove an active source of disease. In the United States, diarrhœa and dysentery are much under the influence of season and climate. Like intermittent and remittent fever, the ratio augments with the increasing temperature of season and the decrease of latitude. In the southern regions, the annual ratio of diarrhœa and dysentery is more than twice as high as the northern; and, taking the general average of the United States, the ratio of the third quarter is more than threefold greater than that of the first.

Diseases of the Brain.—The ratio of admissions and deaths by this class of diseases very nearly corresponds with the average of the United Kingdom and Gibraltar. In Malta, as in England, the mortality from this cause is twice as high among the civil as the military population. It would seem that high temperature exercises little or no influence upon cerebral affections.

Malta Fencibles.—In this corps, composed entirely of natives enlisted for a limited period of service, the annual ratio of mortality is only 9 per 1000. As this is less than half the mortality among the troops of the line, it strikingly demonstrates the exemption enjoyed by soldiers composed of the indigenous inhabitants of a colony, compared with those foreign to the climate.

> "The Maltese use very little animal food; bread, with the vegetables of the country, and occasionally a little fish, forms their principal sustenance; and the healthy and efficient state of the corps may no doubt be partly attributed to the important circumstance that, in becoming soldiers, they have not been required to change the simple diet which nature seems to have pointed out to the inhabitants of all southern latitudes as most conducive to their health." p. 29.

3. *Ionian Islands.*—The islands comprised in this military command are Corfu, Paxo, Santa Maura, Cephalonia, Ithaca, Zante, and Cerigo. The physical aspect of these islands is very much alike. Mountainous, rugged, and for the most part comparatively barren, they, at first sight, present nothing to the view but masses of bare rock, broken into abrupt and picturesque forms, and intersected by deep clefts and ravines, which occasionally open into valleys of limited extent.

> "As these islands, with the exception of Cerigo, do not differ materially in geographical position, there is but little difference in the nature of their climate. Like all mountainous regions, they are subject to sudden atmospherical vicissitudes; the extremes of cold and heat, dryness and moisture, tempestuous and calm weather, often succeeding each other in the space of a few hours. * * * * The degree of heat at particular seasons is greatly influenced by the direction of the wind. When from the north or northeast it is generally cool and pleasant, but from the south or its collateral points it is hot and humid, often accompanied by mist and rain, and not unfrequently by the sirocco, during the continuance of which not only is vegetable life parched and languid, but the animal powers succumb to its influence. Patients previously convalescent are apt to relapse, ulcers and wounds become more difficult of cure, and every type of disease, but particularly remittent fever, assumes a more aggravated form." p. 30.

The mean temperature of each month, on an average of 10 years, ranges from 52° (February) to 81½° (August). But the extremes of heat and cold are said to be much more sensible to the feelings than is indicated by the mere range of the thermometer. Of the annual quantity of rain we possess no exact measurement, but it appears to be rather under than above the average in similar latitudes.

The climate of these islands has proved much more inimical to British troops than that of the other Mediterranean stations. Compared with Malta, the annual ratio of mortality per 1000 is as $28\frac{3}{10}$ to $18\frac{7}{10}$, and with Gibraltar as $28\frac{3}{10}$ to 22. Among the natives of the Ionian islands, however, the mortality does not appear to be higher than among those of Malta or the south of Europe.

Fevers. One of the leading features of the climate of the Ionian isles, is the prevalence and fatal character of this class of diseases, to which alone nearly one-half of the admissions and deaths are attributable. By remittent fever, 9 per 1000 of the strength have been cut off annually, though not more than one in three thousand has died from the same cause in Malta, or even in Gibraltar, if we exclude the epidemic of 1828. This disease, though not so prevalent, is nearly as fatal as in the West Indies, 1 in 11 having died of all those attacked, and occasionally at some of the stations, even as many as 1 in 8. Its prevalence is confined mostly to the months of July, August, September, and October, whilst the remittent fever of the West Indies and Africa rages with great severity at all seasons, though more commonly from July to October. It is stated that those who have had remittent fever in the summer are particularly liable to intermittent in winter, even if they have removed to a station where the latter is otherwise rare. The same fact was observed in the cases of fever which proved so fatal to the British troops at Walcheren.

> *Diseases of the Lungs.* "Notwithstanding the variable character of the climate, the rapid alternations of temperature, and the tempestuous weather which frequently prevails in this command, diseases of the lungs are both less prevalent and less fatal than at Malta or Gibraltar: the admissions into hospital by that class of diseases in these three commands being respectively as 90, 120, and 141, and the deaths as $4\frac{4}{10}$, 6, and $5\frac{3}{10}$ per 1000 of the strength annually. The principal exemption in the Ionian islands is from catarrhal affections, which are not half so prevalent or half so productive of mortality as in the other Mediterranean stations, or in the United Kingdom. Most of the deaths arise from consumption; but neither is the proportion attacked so high, nor the fatal cases so numerous as in Malta, where there exists a comparatively equable temperature, and that mild condition of the atmosphere which is supposed favourable to persons predisposed to that disease. * * * It is stated in many of the Medical Reports that, owing to the sudden and frequent atmospherical vicissitudes in this climate, inflammation of the lungs is extremely frequent and fatal. The result of these investigations, however, establishes that it is not more so than in other stations which are less liable to such vicissitudes." p. 35.

But more of this anon.

The remaining diseases, classified in the usual manner, do not present any characters different from those generally exhibited in the Mediterranean stations.

Plague.—This terrible disease has not prevailed in any of the Ionian islands since 1817. Unlike the ordinary course of febrile epidemics, it seemed to be wholly uninfluenced by the seasons, being just as virulent in the middle of winter as in the opposite season, nor did it become more mild in character as the epidemic was about to disappear. We possess no exact statement of the mortality induced; but it is stated in Gregory's "Practice of Physic," that among 700 attacked in the district of Leftimo, only 70 recovered. Whilst some maintain the doctrine of importation and subsequent propagation by contagion, others held that it is attributable to the operation of some unappreciable atmospherical agency.

Having concluded his observations in reference to the command generally, the Reporter next examines in detail the statistics of each station, viz. Corfu, Paxo, Santa Maura, Cephalonia, Ithaca, Zante, Cerigo, and Parga, and thus determines their relative salubrity. In the "General Summary," he gives a table for the purpose of showing how inadequately the operation of any general cause, as heat or moisture, accounts for the striking difference of mortality in the same years, at stations in the same vicinity.

> "Here then we find that, instead of extending over the whole command as they would be likely to do if resulting from the operation of any general cause, the sudden accessions of mortality which occasionally take place are frequently confined to one island, while others, in the immediate vicinity, are exempt. In 1818, for instance, when 50 per 1000 of the strength died at Zante, the mortality at Cephalonia, only a few miles distant, was but 9 per 1000. In 1817 and

1819 the troops were unhealthy both at Santa Maura and Zante, while those of Cephalonia, lying between them, experienced no more than the usual degree of mortality, and in 1828 and 1829, though a fourth part of the force was cut off at Santa Maura, those at Corfu and Zante were subject to no great degree of sickness, and even those in Cephalonia, immediately adjacent, did not suffer in any marked degree. Various other instances of a similar nature might be quoted." p. 54.

On the Influence of Age and Length of Residence on the Mortality of Troops serving in the Mediterranean.—It appears that the mortality increases with the advance of age at all these stations in a much more rapid ratio than in the United Kingdom. This is particularly observable at Malta, where the increase is nearly as rapid as in tropical regions. The rapid increase of mortality with the advance of age in each of these three commands, sufficiently demonstrates that in the Mediterranean, as in the West Indies, troops do not suffer less in proportion to their length of residence, but the reverse. The doctrine of acclimatization, therefore, falls to the ground, when subjected to the test of numbers. Even febrile diseases, in which the advantage of length of residence in warm climates is supposed to manifest itself most strongly, increase with almost as uniform a progression as that which regulates the law of mortality at different ages.

Deductions from the preceding Report.—In regard to pulmonary diseases, the Reporter remarks—

> "The mild climate of the Mediterranean has generally been considered favourable to the cure or prevention of consumption, and other pulmonary affections. To ascertain whether this supposition is well founded, or the reverse, is manifestly an object of much importance to medical science, and can only be determined by investigations extending over a long series of years, and including large masses of individuals. The experience of civil practitioners, however carefully recorded, is on too limited a scale to warrant general conclusions on a subject of such magnitude; yet, hitherto, no other source of information has been available for that purpose, and it is not surprising, therefore, if their conclusions, when submitted to the test of numerical calculation, are, in many instances, found to be erroneous." p. 63.

Having given a table showing the relative prevalence of consumption among the troops in the Mediterranean and the United Kingdom, the Reporter proceeds—

> "This affords so accurate a standard of comparison as to place beyond a doubt the interesting fact, that, except the Ionian Islands, the liability of troops to consumption in the Mediterranean stations is even greater than in the United Kingdom. We have not compared the deaths by consumption for a similar period, because conclusions could not have been drawn in regard to the relative mortality with the same accuracy, so many laboring under that disease having died on their passage home or after their arrival in this country; but from all the information we have been able to obtain there can be no doubt that if due allowance is made for these casualties, the proportion of deaths also, among those attacked by consumption, will be found fully as high in the Mediterranean as in the United Kingdom.

* * * * * * * * *

> "These facts offer a striking contradiction to the popular idea regarding the influence of sudden atmospherical vicissitudes and rapid alternations of temperature, in inducing this disease; but it is even more remarkable that similar results should be obtained in regard to the relative prevalence and mortality by pleurisy and inflammation of the lungs, which are supposed to be still more influenced by these agencies. * * * * Here, then, we find that inflammatory affections of the lungs are nearly twice as prevalent in the Mediterranean as among the

same number of troops in the United Kingdom, and that in the mild climate of Malta they are also twice as fatal.

> "These facts, combined with a careful examination of the Abstracts in the Appendix, lead to the inference that residence in the Mediterranean, though so often recommended to patients labouring under pulmonary affections, is by no means likely to be attended with beneficial results: in some cases, no doubt, change of air, change of scene, and the sea-voyage, may have benefitted a patient, and led to a partial recovery, but the same would in all probability have taken place wherever he had been sent, it being by no means likely that any beneficial influence can be exerted by the climate itself, when a body of selected soldiers, subject to no severe duty and exposed to no hardships, lose annually a larger proportion of their number by consumption than in the United Kingdom." p. 64.

These extracts are not made in commendation, but to exhibit fairly the Reporter's views, to the end that the reader, in the sequel, may be enabled to perceive that mere figures are not facts, and that unless deduced from correct data they serve only to mislead.

III. *On the Sickness and Mortality among the Troops in British America.*

The stations occupied by the British troops on the Continent and the Coast of North America form four military commands:—1. The Bermudas; 2. Nova Scotia and New Brunswick, including Cape Breton and Prince Edward's Island; 3. Upper and Lower Canada; and 4. Newfoundland.

1. *The Bermudas.*—These islands lie about 600 miles to the east of South Carolina, in lat. 32° 25′ N., long. 64° 50′ W. They are said to exceed 300 in number, but most of them are barren rocks, four only being of sufficient importance to be garrisoned by troops, viz. St. George, the Main, Somerset, and Ireland Island.

Although very destitute of soil, which generally consists of the debris of marine shells mixed with sand and vegetable mould, yet a considerable part of these islands, particularly on the southern side, is covered with forests of lofty cedar. There is little cultivation, and the produce consists principally of arrow-root, Indian corn, yams, and potatoes.

> "The climate of the Bermudas has been described by some authors as a perpetual summer. This description, however, appears to be rather overstrained; compared with the climate of northern regions, or even of the adjacent coast of America under the same latitude, it is certainly uniform; but the summer is exceedingly hot, even more so than in the West Indies, probably attributable to the light and scanty nature of the soil, which, being speedily divested of vegetation by the influence of solar heat and the absence of moisture, reflects the sun's rays from its arid surface with increased intensity. The absence of the regular trade winds, which serve to modify the heat in the West Indies, has by some been supposed another cause of the high range of temperature during the summer months, but this seems by no means probable in a climate where there is rarely a calm, and strong winds generally prevail from one quarter or another." p. 3.

The temperature of the summer months in the Bermudas, compared with that of British Guiana, which is 1500 miles to the south, exhibits an excess of several degrees.

> "The limited extent and moderate elevation of the Bermudas leave them exposed to every breeze, and, in these regions, calms are seldom of long continuance. Southerly winds are most common during the summer, and are

said to be damp and oppressive; those from the northeast frequently blow with great violence during winter, and are dry, cold, and in many instances too keen for invalids. Winds from the west and northwest are most common in spring and autumn, and, when from the latter point, are generally accompanied by heavy falls of rain or thunder-storms." p. 4.

The annual ratio of mortality, according to the War Office Returns, is $32\frac{1}{3}$ per 1000 of the strength; but this includes an epidemic of yellow fever, in 1819, by which a fourth part of the force was cut off in a couple of months. We may here remark that, with the exception of the statistics of the United Kingdom, nearly all the results are based on an average of twenty years.

Fevers.—If we exclude the sickness and mortality by yellow fever in 1818 and 1819, the other types of fever will be found less frequent and less fatal than at any of the Mediterranean stations; and, notwithstanding the numerous marshy situations in some of these islands, fevers of the intermittent form are almost altogether unknown. Eruptive fevers are exceedingly rare, only two cases being reported in the course of twenty years.

Diseases of the Lungs.—"Though this class of diseases, when taken in the aggregate, does not appear to be very prevalent in these islands, yet the most dangerous of them, viz. inflammation of the lungs and consumption, are decidedly so, and hence the above ratio of mortality is unusually high, being $8\frac{7}{10}$ per 1000 of the strength annually, which is more than among troops in the United Kingdom, or any of the Mediterranean stations.

"This appears more remarkable when we consider the uniformity of temperature at the Bermudas during a great part of the year, and the absence of those extremes of cold to which such diseases in northern latitudes are frequently attributed. It is sufficiently demonstrative of the erroneous nature of the ideas generally entertained on this head, particularly as regards consumption, that 9 per 1000 of the troops at this station are attacked annually by that disease, of whom nearly three-fourths die before an opportunity offers for their removal, while in Great Britain the proportion attacked annually is but $6\frac{4}{10}$ per 1000." p. 7.

Hepatic Affections are twice as prevalent and twice as fatal as in the United Kingdom.

Diseases of the Stomach and Bowels are even more prevalent than in the windward and leeward command, but less severe in character. Their prevalence is attributed to the inadequate supply of fresh provisions.

Diseases of the Brain, if we deduct the cases and deaths reported under the head of *delirium tremens*, are, notwithstanding the high temperature, exceedingly rare.

Venereal Affections.—Of these the ratio is remarkably low—an exemption which cannot, as at some stations, arise from any sanatory regulations.

2. *Nova Scotia and New Brunswick.*—The peninsula of Nova Scotia, which is about 280 miles in length, and from 50 to 100 in breadth, is perfectly insular, except the point—a strip of land only eight miles in width—which connects it on the northwest with the province of New Brunswick. The superficial area of this peninsula is computed at 15,600 square miles, of which not a twentieth part is cleared, or under cultivation. Its physical aspect is generally undulating, but the loftiest range of mountains does not exceed 800 feet. The south and west coast are deeply indented with numerous bays and lagoons by the action of the Gulf Stream,

which, rushing upon this portion of the continent in tides of from 60 to 70 feet, overflows the country to the distance of several miles, and converts the mouth of streams, fordable at low water, into extensive arms of the sea where whole fleets might ride at anchor.

> "As a necessary consequence of this phenomenon, a very considerable portion of the banks of the rivers and the heads of the bays on that side of the peninsula, is constantly in a marshy state, and as these tides are thickly impregnated with alluvial soil, owing to the force with which they are impelled against the adjacent continent, they leave on their reflux a considerable deposit of mud, which, by the aid of embankments, is converted into rich meadow land; and even where no such care has been taken, spontaneously supplies a coarse winter fodder for cattle.
>
> "Though the southeast coast may therefore, from the nature of its soil and surface, be considered as in a great measure free from the agencies supposed to give rise to malaria, yet the western coast, particularly around Windsor and the head of the Bay of Fundy, abounds in them in no ordinary degree, both as regards marshy land, and a muddy surface exposed during summer to the action of a high temperature. The interior of the peninsula, too, is so much intersected by lakes and bays, that nearly one-third of its surface is under water, yet the inhabitants enjoy a remarkable degree of health, and an almost total exemption from those intermittent and remittent fevers, which, as we shall hereafter have occasion to show, affect the constitution in Upper Canada to so remarkable an extent.
>
> "The climate of this province is distinguished by great and sudden alternations of temperature, such as, even in the changeable climate of Britain, appear almost incredible; though Nova Scotia is in this respect less remarkable than some of the North American stations, the thermometer has been known to exhibit a difference of 52° in 24 hours. The atmosphere is also exceedingly moist, the showers heavier and more frequent than in Britain, and fogs are common along the sea-coast throughout the year, but particularly in May and June, though they seldom extend any distance into the interior.
>
> "Though the winter is no doubt exceedingly severe, as compared with that of Great Britain, yet the cold is not by several degrees so intense as in that part of the American continent farther to the west, neither is the heat of summer so great, *probably*, attributable to the insular situation of the province having a tendency to modify both these extremes, the thermometer is seldom lower than 6° or 8° below zero in winter, or above 88° in summer, but we possess no table sufficiently accurate to exhibit its precise range for a series of years."

The modified climate of Nova Scotia is, *of course*, attributable to its insular position, and to its being extensively intersected by lakes and bays. Some influence is also to be ascribed to the Gulf-stream, which strikes upon this part of the coast.

> "The prevailing winds are from the east in the spring, from the south or southwest in summer and autumn, and from the north or northwest in winter, at which period a change to any other quarter is generally followed by a rapid rise in the thermometer, accompanied by much rain or snow.
>
> "From December to the end of March the ground is generally covered with snow. Summer follows winter in such rapid succession, that there is scarcely any spring, but the autumn is pleasant and sometimes of long duration, as, towards its termination, there is frequently a continuance of what is termed the Indian summer, till December again ushers in the winter with its usual severity." p. 11.

The Reporter next gives the medical topography of the military stations of Nova Scotia, viz., Halifax, Windsor, Annapolis, and the adjacent islands of Cape Breton and Prince Edward.

New Brunswick.—This province, which comprises nearly 14 millions of acres, is united to Nova Scotia by the narrow strip of land referred to above. It differs from that peninsula in being composed of bolder undulations, which in some parts assume a mountainous character, and it has been brought less under cultivation.

The troops are principally quartered at St. Johns and Frederickton.

> "The climate of New Brunswick, particularly at Frederickton, is not liable, during winter, to such sudden vicissitudes as that of Nova Scotia. The frost is steadier, and the winter more severe as well as of longer duration; the heat of summer is also more intense, and the thermometer, in the course of one year, has been known to range from 96° above to 42° below zero, though these extremes are considerably beyond the usual average.
>
> "As in Nova Scotia, fogs are common along the sea-coast of New Brunswick, particularly in the months of May and June, but seldom extend any distance into the interior, nor do they appear in the slightest degree prejudicial to health, the stations most exposed to them being quite as free from sickness as any other part of the command." p. 13.

The annual ratio of mortality in Nova Scotia and New Brunswick, on an average of 20 years, is according to the Medical Reports, $14\frac{7}{10}$, and, according to the War-office Returns, 18 per 1000.

Fevers.—These are mostly of the common continued type which is found to prevail in every climate. So rare are intermittents that not two cases occur among the whole force annually, and these have in almost every instance been traced to individuals who had previously suffered from them in Upper Canada. As the soil of Halifax is arid and rocky, this exemption might be expected there; but it is surprising that it should extend equally to the troops and inhabitants of Windsor, Annapolis, Fort Cumberland, and Frederickton—situations abounding with those supposed sources of malaria, which, in the provinces of Upper Canada, are found, or at least supposed to produce fevers of the remittent and intermittent type.

In the statistics of the United States Army, the same contrast, as regards the prevalence of intermittent fever, is found to exist between the posts on the coast of New England and those on our northern chain of lakes. Whilst in the former region, intermitting fever is almost unknown, scarcely a case reported being of domestic origin, the disease, in the latter, is very rife. At Fort Gratiot, situated at the outlet of Lake Huron, for example, the annual ratio of cases is 72 per 1000 men. As respects remittent fever, however, the average on the lakes is but little higher than on the coast of New England.

Diseases of the Lungs.—It is remarked by the Reporter that notwithstanding the severe winter and sudden atmospherical vicissitudes, peculiar to Nova Scotia and New Brunswick, diseases of the lungs are less prevalent in the proportion of 125 to 148, and less fatal in proportion of $7\frac{1}{10}$ to $7\frac{7}{10}$. Were any other proof necessary to show how little even the most acute of these diseases seems to be aggravated by such atmospheric influence, it would, according to the mistaken views of the Reporter, be found in the relative proportion treated for inflammation of the lungs and pleurisy in this command, compared with the Mediterranean and Bermuda—climates remarkable for their mild and equable temperature.

Diseases of the Liver, and of the Stomach and Bowels. The prevalence of these two classes of diseases is about the same as among the dragoon guards and dragoons serving in the United Kingdom; but the mortality by the former is only half as high, whilst that by the latter is twofold greater.

Epidemic Cholera. In 1832, when the disease raged with great severity in Canada, the troops in this command escaped it; but in 1834, it broke out among those at Halifax. It is worthy of remark that in two instances in which troops suffering from this malady were removed only a few miles, it quickly disappeared. Although the circumstances under which the disease first appeared were such as to favour the idea of contagion, yet nothing occurred in the course of its progress to strengthen that supposition.

3. *Canada.*—This military command, which includes the provinces of Upper and Lower Canada, is of so vast an extent as to preclude anything like a geographical description.

> "The climate of the lower province is distinguished for the extreme severity of its winter, and the sudden alternations of temperature to which it is subject; so remarkable are these, that at Quebec the thermometer has on some occasions been known to fall 70° in the course of 12 hours; the cold weather sets in as early as November, and from the end of that month till May, the ground remains covered with snow to the depth of 3 or 4 feet. During this period there is generally a clear dry atmosphere, with light northwesterly winds or calm weather, and the sensation of cold is by no means so acute as might be anticipated from the low range of the thermometer; but when the wind blows from the northeast, especially with any degree of violence, the intensity of the frost becomes so excessive, that on several occasions the mercury, frozen in the thermometer, has no longer served to record the extreme reduction of the temperature. The general range, however, during winter, is from the freezing point to 30° below zero.
>
> "Though there is seldom a complete thaw in winter, yet occasionally, when the wind changes to the southward and eastward, the usually clear and serene sky becomes overcast, the atmosphere damp, and a considerable rise in the thermometer takes place, accompanied by thick fogs and a heavy fall of snow. The seasons do not glide imperceptibly into each other as in more temperate regions; summer succeeds so rapidly to winter that the thermometer sometimes rises to 80° degrees at mid-day before the ground is clear from its covering of snow.
>
> "Summer commences about the middle of May, and is usually ushered in by moderate rains and a rapid rise in the temperature, though the nights still continue cool; but during June, July, and part of August, the heat is great, indeed often as oppressive as in the West Indies, the thermometer frequently attaining to 95° in the shade; in these months the rain is never excessive, nor of long duration; the earth, already saturated by the melting of the snow, requires no further supply of moisture to aid the rapid progress of vegetation." p. 20.

Upper Canada may be said to extend from the Hudson's Bay Territory, in latitude 46°, on the north, to that of the United States, latitude 42° on the south; and from the river Ottowa and boundary of Lower Canada on the east, to the distant shores of the Pacific. A region of such extent necessarily presents considerable diversity of climate. Compared with Lower Canada the Reporter observes as follows:

> "It [the winter] is, in general, shorter by at least two months, while spring and autumn are lengthened in a corresponding proportion. The frost is, perhaps, for a few days as intense, but never of such duration; and thaws occur at short intervals. Snow seldom falls in any quantity till towards the end of December, and usually disappears in March; and the severity of the winter is said

to have perceptibly diminished of late years, as the surface has been cleared and brought under cultivation.

"The climate is generally more equable than the lower province; and though the thermometer ranges higher by a few degrees, the summer heat is not so oppressive, probably owing to the influence so vast a body of water is likely to exert in modifying the temperature, and to the cooling breeze which prevails along the lakes during the day." p. 22.

The influence of these ocean-lakes, which contain an area of 93,000 square miles, upon climate, is no longer a doubtful question. In the "*Army Meteorological Register,*" published by Surgeon General Lawson, the subject is satisfactorily elucidated. Proceeding from the Atlantic ocean westward, the variations of the *isotheral* and *isocheimal* curves—the lines of equal winter and summer temperature—afford a beautiful illustration of the equalising tendency of large bodies of water. On the coast of New England, the ocean modifies the range of the thermometer and the mean temperature of the seasons; as we advance into the interior, the extreme range of temperature increases and the seasons are violently contrasted; having come within the influence of the Great Lakes, a climate like that of the sea-board is found; and proceeding into the region beyond the modifying agency of these inland seas, an excessive climate is again exhibited. Here are then two systems of climate on the same parallels of latitude, that of the ocean and the lakes being characterised as *uniform*, and that of the intervening tract and the region beyond the lakes, as *excessive* climates. As the mean annual temperature presents little variation on the same parallel, the marked difference of climate arises from the unequal distribution of heat among the seasons. In positions remote from large bodies of water, the winters are colder and the summers hotter than in the opposite localities in the same latitude. This is strikingly illustrated by a comparison of the difference between the mean temperature of winter and summer, and the difference between the warmest and coldest month, in the two systems of climate. Let us take, for example, Fort Sullivan, on the coast of Maine, and Fort Snelling in Iowa Territory, the two being nearly in the same latitude. At the former, the difference in the mean temperature of winter and summer is 39°.15, whilst that of the latter is 56°.60; and between the warmest and coldest months, the ratios are respectively 43°.87 and 61°.86. Accordingly, we find too a considerable difference in the mean annual range of the thermometer, which is at Fort Sullivan 104, and at Fort Snelling 119. But another marked distinguishing feature between these two systems of climate, is, the difference between the mean temperature of winter and spring, which is at the former 17°.16, and at the latter 30°.83—a cause to which is owing the sudden development of vernal vegetation in excessive climates.

In Canada the annual ratio of deaths, according to the War-office Returns, is 20 per 1000.

Fevers.—The results, compared with those of Nova Scotia and New Brunswick, exhibit a remarkable prevalence of fevers in Canada. Whilst several thousand cases of intermittent fever are reported in the latter command, scarcely one indigenous case has ever been known in the former. The same contrast is exhibited in the results given by Upper and Lower Canada, the proportion being as 178 to 26. Moreover, it is necessary to bear in mind that the majority of cases in Lower Canada occurred among soldiers who had laboured under the disease or had acquired a predispostion to it in the upper provinces. We have already referred to the fact that a similar contrast exists between the coast of New England and the lakes.

The Reporter observes that these diseases are said to be comparatively rare wherever the surface is covered with dense forests, even though the ground is wet and marshy. The vicinity of land recently cleared is most subject to them, particularly meadows or open patches of the forest, which, though denuded of trees, have not been brought under cultivation. It would appear, too, that their prevalence is diminishing with the progress of agricultural improvement.

This opinion is corroborated by the experience of the medical staff of the army, as well as that of the civil practitioners in our newly settled regions. From our earliest history, it has been a well known fact that a region partially cultivated is more insalubrious than a wilderness, or a country in the highest state of agricultural improvement. The hunter and the wild borderer suffer less from disease than the actual settler. The diseases of the former, as the surface of the earth, protected from the sun's action by a dense and exuberant vegetation, yields comparatively little noxious effluvia, are mostly of an inflammatory character, resulting from fatigue and exposure; but as soon as the forest begins to fall at the appearance of the permanent settler, who turns up, at the same time, to the action of our intense summer heats, the soil rich in organic remains, the atmosphere becomes infected with terrestrial emanations, which spread on every side disease and death.

Diseases of the Lungs.—As an evidence how little the tendency to consumption is increased either by intensity of cold or sudden atmospherical vicissitudes, the Reporter adduces the ratios per 1000 attacked annually by consumption in Bermuda, Gibraltar, and Canada, the averages being respectively $8\frac{8}{10}$, $6\frac{5}{10}$, and $6\frac{5}{10}$.

> "In the two former climates the thermometer rarely falls to the freezing point, and its fluctuations are comparatively trifling; in the latter the cold is often so intense as to freeze mercury, the variations sometimes exceed 50° in the course of a few hours, and the soldier, in passing from his heated guard-room to his night duties in the open air, is not unfrequently exposed to an immediate change of temperature exceeding 100°." p. 29.

Epidemic Cholera.—The proportion of deaths to admissions was nearly one in three. One of the most extraordinary features of this epidemic is, that the ratio of fatality is nearly alike in all the military commands investigated. In both the years (1832 and 1834) when this epidemic prevailed, the native Indians suffered from it to the same extent as the white population. Although their principal remedy consisted in swallowing large quantities of charcoal mixed with lard, yet almost the same proportion recovered as among the white inhabitants of the towns, who possessed every advantage which the aid of medical science could suggest. Unlike the epidemics of yellow fever described, not a single officer died from cholera, and only four were attacked during the first, and three during the second epidemic. This leads to the inference, observes the Reporter, that, though little can be done to ameliorate the character of the disease when allowed to arrive at an advanced stage, yet that a generous diet, regular habits, and the degree of attention which persons in the higher ranks of life are likely to pay to its premonitory stages, have a powerful effect in diminishing their liability to its influence.

In tracing the rise and progress of this disease, nothing is more remarkable than the regularity with which, *on both occasions*, it advanced along the principal channels by which the tide of emigration and of commerce flowed through the country. Along the St. Lawrence and the lakes, with the single exception of Fort George, it may be said to have travelled with post-like regularity. This singular disease pursued the same steady course along the banks of the Ottowa, another of the principal channels of emigration into Canada, as well as up the Richelieu, and along Lake Champlain through the United States to New York, a route which is also frequently taken by emigrants on their arrival in Quebec.

> "These circumstances, combined with the fact of several persons having died from the disease on their passage from Ireland, in each of the years when it appeared, led to the belief of its having been imported and subsequently communicated by contagion; various precautionary measures were in consequence adopted to prevent its propagation, and strict quarantine regulations were enforced, both as regards the troops and inhabitants; but, though in some instances these were apparently effectual, in others they proved of little avail, and the contagious nature of the disease was subsequently rendered extremely questionable from the circumstance, that neither the physicians nor those in constant attendance on the sick exhibited any peculiar liability to it." p. 32.

The Reporter next passes under review several classes of diseases, which, notwithstanding they rarely prove fatal, are, in every command, a source of considerable inefficiency, such as rheumatic and venereal affections, abscesses and ulcers, wounds and injuries, diseases of the eyes and the skin, punished, &c.

> *Rheumatic Affections.*—"The first and most striking feature in this comparison is, that in a climate of which the temperature in winter is so low, and liable to such alternations as that of North America, the proportion of rheumatic affections should be less than in the United Kingdom. It is even lower than in the Mediterranean or Bermuda, though there the thermometer rarely falls to the freezing point, and the atmospherical vicissitudes are comparatively trifling. Observations recently made by the medical association of Great Britain on the prevalence of rheumatic affections in different counties of this kingdom have given similar results, and established that these diseases are less under the influence of atmospheric agency than has generally been supposed." p. 34.

4. *Newfoundland.*—This island lies on the northeast side of the Gulf of St. Lawrence, and adjacent to that part of the American continent termed the coast of Labrador. Its extreme length is 420 miles, and extreme breadth 300; but of this extensive territory the greater part is as yet unexplored. The few tracts visited by Europeans have been found hilly, and sometimes even mountainous, varied by extensive plains covered with grass or low stunted bushes, and intersected by numerous rivers and lakes.

The climate of the southern portion of Newfoundland, it is observed by the Reporter, is similar to that of Nova Scotia, except that the summers are colder, of shorter duration, and liable to more sudden vicissitudes, owing to the melting of the icebergs on the coast, which exerts considerable influence on the temperature; the island has also been long noted for the frequent and dense fogs which prevail along its banks, and often continue during a great part of the summer. None of these agencies, however, seem to operate prejudicially on the health of the inhabitants, among whom the mortality is on a lower scale than in any portion of the American continent.

This favourable view of the climate as regards the native inhabitants, is not, however, confirmed by the extent of mortality among the troops. The returns from these troops do not extend farther back than 1825. Among the veterans, the annual mortality, on an average of 12 years, has been upwards of 41 per 1000, whilst that of the artillery, during the same period, has been only 22 per 1000. The high ratio of the former is ascribed in part to their advanced age, but still more to the effects of long-continued habits of intemperance. Among 100 deaths, from 1825 to 1832, 42 are attributed to the direct effects of drunkenness!

In the section on the extent of *invaliding* among troops in British America, it is shown that the proportion discharged amounts to 19 per 1000 annually, being the average of the Mediterranean stations, and nearly the same as among the dragoon guards and dragoons serving in the United Kingdom. The Reporter having further shown that the ratio per 1000 invalided annually for pulmonic affections, is in British America $3\frac{8}{10}$, Gibraltar $3\frac{9}{10}$, Malta 5, and the Ionian Islands $2\frac{8}{10}$, adds—

> "It is thus manifest, that in the mild climate of Malta, one-fifth more are invalided for pulmonic affections than in British America—a sufficient reason, combined with what has previously been stated on the subject, to render extremely questionable the generally received opinions in regard to the influence of temperature in inducing or aggravating these diseases." p. 38.
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> "In the Mediterranean, the proportion of officers attacked by phthisis annually, has been more than twice as high, and by inflammation of the lungs at least a third higher than in Canada." p. 42.

Influence of Age and Length of Residence on Mortality.—In this section it is shown that mortality increases with the advance of age much more rapidly than in the United Kingdom or Mediterranean. So far as regards the Bermudas, this may partly be accounted for by the circumstance that in warm climates the constitution appears to deteriorate rapidly with the advance of age. This will not, however, account for the same feature being manifested, though in a less striking degree, on the continent of North America.

Deductions from the Preceding Report.—In this section, the Reporter inquires whether there exists in the moral or physical condition of the troops in the Mediterranean and American stations, any difference likely to have influenced the results on which the various comparisons in relation to pulmonary diseases have been founded. We deem it wholly unnecessary to follow him in these details, inasmuch as we believe, and as we hope to demonstrate, that the most of his conclusions are founded in error.

> *Rheumatism.* "The caution necessary to be exercised in attributing to certain peculiarities of climate the prevalence of any class of diseases, is so strikingly exhibited by the proportion of rheumatic affections ascertained to have occurred among the troops in different colonies, that the following abstract will best serve to illustrate our observations on this head:—

	Jamaica.	Nova Scotia and New Brunswick.	Bermuda.	Malta.	Ionian Islands.	Gibraltar.	Canada.	Mauritius.	Windward and Leeward Command.	United Kingdom.	Cape of Good Hope.
Admissions from Rheumatic affections annually per 1000 of mean strength.	29	30	33	34	34½	38	40	46	49	50	57

> "Thus we find that in the mild and equable climate of the Mediterranean or the Mauritius, the proportion of rheumatic affections is even greater than in the inclement regions of Nova Scotia and Canada, and that, though some of the provinces of the Cape of Good Hope have occasionally been without rain for several years, these diseases are more frequent in the dry climate of that command, than in the West Indies, where the condition of the atmosphere is as remarkably the reverse; yet have extreme cold and atmospheric vicissitudes, coupled with excess of moisture, been assigned as satisfactory causes for their prevalence." p. 45.

The Reporter next recapitulates evidence to show how inadequate, in many instances, is the supposed influence of emanations from a marshy soil to account for the origin of febrile endemics.

> "In the present Report, we find it established that yellow fever of the most aggravated form has repeatedly made its appearance at Ireland Island in the Bermudas, a rocky barren spot only a few hundred yards in breadth, containing no marsh, and with little or no vegetation except a few cedar trees." p. 45.

In these statistics no distinction is made between remittent and yellow fever; and we will here repeat that we are not, in the present state of our knowledge, justified in averring that the same miasm which produces remittent fever can, in its more concentrated state, excite yellow fever; much less are we warranted in saying that yellow fever is of paludal origin.

> "All the evidence obtained seems only to warrant the inference that a morbific agency of some kind is occasionally present in the atmosphere, which, under certain circumstances, gives rise to fevers of the remittent and intermittent type; and that, though the vicinity of marshy and swampy ground appears to favour the development of that agency, it does not necessarily prevail in such localities, nor are they by any means essential either to its existence or operation." p. 45.

As the development of the agency producing these fevers requires no doubt a certain concurrence of causes, as heat and moisture, it certainly does not follow that it should "necessarily prevail in such localities;" and, in regard to the question whether a marshy locality is "by any means essential either to its existence or operation," we are decidedly of opinion that the induction which lays intermittent fever to its operation is too strong to be shaken by the exceptions adduced by the Reporter. Such logical refinements will not bear the test of common sense. Were one to attempt to persuade a pioneer of civilization or even a red-skinned Aboriginal, in Florida, Louisiana, or Arkansas, whose experience has taught him that along the margins of streams, lakes, and marshes, he is very subject to intermittent fever, whilst in the adjacent sandy pine woods he is exempt, that there is no connection between the marsh and the fever, he might admire the ingenuity of the reasoning, but would not yield assent against the evidence of his own senses.

Having completed the examination of these documentary reports with the exception of the details in reference to pulmonary diseases, we shall now condense into a tabular abstract the ratios of this class of diseases in each military command, as the West Indies, the United Kingdom, the Mediterranean, and British America. These results are based upon the aggregate mean strength and aggregate of cases and deaths in each command—a method which presents the only legitimate mode of calculation.

Ratio of Pulmonary Diseases.

Military Commands.			No. of y'rs of Observation.	Aggregate mean Strength.	Ratio per 1000 of the strength annually.							
					Catarrh, Acute and Chronic.		Pneumonia and Pleuritis.		Hæmoptysis and Phthisis Pulmonalis.		All Diseases of the Lungs.	
					Treated	Died	Treated	Died	Treated	Died	Treated	Died
West Indies.	White Troops.	Windward and Leeward Command.	20	86.661	75	2	23	1.3	15	7.1	115	10.5
		Jamaica "	20	51,567	54	.1	14	.3	15	6.2	84	7.3
		Bahamas "	20	535	13		6	4	8	2	28	5.6
		Honduras "	20	320	28		6	3	6		41	3.1
		Average.		139,083	67	1.6	19	.9	15	6.8	103	9.3
	Black troops.	Windward and Leeward Command.	20	40,934	37	2.6	45	3.9	15	9.8	99	16.5
		Jamaica "	20	5,729	12	.5	12	1.3	11	7.5	35	10.2
		Bahamas "	20	7,102	48	.3	25	2.1	9	7	88	9.7
		Honduras "	20	4,356	54	.2	10	.7	12	7	96	8
		Average.		58,121	38	1.9	36	3.3	14	9	91	14.4
United Kingdom.		Dragoon Guards and Dragoons.	7	44,611	122	1.2	16	.8	8	5.6	149	7.7
		Foot Guards.	7	34,538		.2		2.1		11.5		14.1
		Household Cavalry.	7	8,649				.6		7.4		8.1
		West India Depots.	7	23,537		.4		.5		8.7		9.6
		Average.		111,335		.7		1.2		8.2		10.1
Mediterranean.		Gibraltar.	19	60,269	86	.6	42	.9	10	3.6	141	5.3
		Ionian Islands.	20	70,293	48	.4	32	1.2	7	2.9	90	4.6
		Malta.	20	40,806	74	1.1	34	1.1	8	3.7	120	6
		Average.		171,368	68	.6	36	1.1	8	3.4	112	5.2
		Civil population of Malta.	13	1,303,517		.8		.5		1.1		3
British America.		The Bermudas.	20	11,721	77	1.5	38	1.1	11	6.1	126	8.7
		Nova Scotia & New Brunswick.	20	46,442	74	.4	34	1.2	9	4.8	117	6.8
		Upper and Lower Canada.	20	64,280	89	.6	43	1.5	8	4.3	141	6.4
		Average.		122,443	82	.7	39	1.4	9	4.5	131	6.3

Having thus presented a tabular summary of all the results relative to pulmonary diseases, we will be the better enabled to view the subject in its various relations. Before proceeding, however, to test the legitimacy of the inferences deduced, as well as the correctness of the numerical results themselves, it will be necessary, as a preliminary step, to free the question from several difficulties.

The Reporter has assumed England as the *standard of comparison*, by which to test the relative salubrity of other countries in regard to pulmonary diseases. He has consequently adopted a classification of climates based on mere latitude, without reference to the phenomena of temperature arising from physical geography. In the present instance, the impropriety of arranging climates by the test of latitudes is the more apparent from the circumstance that pulmonary diseases, as a class, are peculiarly dependent on climatic characteristics. If then it can be shown that the causes which induce a low ratio of pulmonary affections are little influenced by latitude, will not this standard prove to be a false one? Now, it has been demonstrated by the statistics of the United States Army that in the climates in which the extremes of temperature are moderated, in which there is little difference between the mean temperature of winter and summer—that pulmonary diseases as a class exhibit a low ratio. So great is the influence of local causes upon temperature that at Edinburgh, Scotland, the difference in the mean temperature of winter and summer is only 17°.90, whilst on the same parallel at Moscow, Russia, it is 56°.32; and in North America, on a parallel 12° farther south, we find this difference between the two seasons to be, at Fort Sullivan on the Atlantic sea-coast, 39°.15, at Fort Snelling in the interior remote from any large body of water 56°.60, and at Fort Vancouver, about 1° farther north, on the western coast of America, 70 miles from the Pacific, only 23°.67. As the range of the thermometer is not greater in England than in Italy, and as the difference in the mean temperature of summer and winter is actually less, a classification of climates based on mere latitude in reference to pulmonary diseases, becomes an actual absurdity; but, as in the British commands investigated, the Reporter had to deal entirely with regions characterized by a mild insular climate, or those in which a low temperature predominates, he had not the means of arriving at truth, presented in the systems of climate pertaining to the United States. We are further told in connection with this subject, that a comparison of the ratio annually attacked out of a given number in different countries, presents the most accurate method of determining the relative agency of climate in the causation of particular diseases, more especially if these investigations extend over a long series of years, and include large masses of individuals of the same profession, the same age, the same habits, and the same diet. Now, if the comparisons, unlike the various British commands, were instituted among the natives of each region, the truth of the remark would be more evident.

Keeping these facts in view, we will be at no loss to reconcile many of the apparent incongruities in regard to the laws of pulmonary diseases inferred by the Reporter of the British statistics. The conclusion that pulmonary diseases as regards the *annual* ratio, are more prevalent in certain *systems* of climate in southern than northern latitudes, is confirmed by the statistics of the United States Army; but when we come to consider the relative influence of the *seasons*, the fallacy of the opinion that it is "*by no means likely that any beneficial influence can be exerted by climate itself*" in pulmonic lesions, becomes at once apparent. That catarrhal diseases, for example, are much under the influence of season and climate, is proved by the following statistical results:—Taking the average of the United States, the ratio of winter is two and a half times higher than that of summer, and the ratio of the class of posts in our northern regions, remote from large bodies of water is nearly four times as high as in the peninsula of East Florida. In the former class is Fort Snelling, whose difference in the mean temperature of summer and winter is 56°.60, and in the latter is Key West with a difference of only 11°.34. Even on the same parallels we find the most marked contrasts. Thus on the coast of New England, where the extremes of temperature are modified, the ratio of catarrhal affections is comparatively low; on the lakes, characterised by similar climatic features, the ratio is somewhat higher; whilst in the excessive climate, in the same latitude, in positions remote from the ocean or the lakes, it is more than twice as high. The connection of these facts with *chronic bronchitis* invests them with more than ordinary importance; for it is in that form of consumption which depends on chronic bronchial inflammation that we are justified in the expectation of deriving advantage from change of climate. Even admitting with the Reporter of the British statistics that the ratio of pulmonary diseases is as high in southern as in northern latitudes, it does not militate against the doctrine that benefit will be derived from change of climate in the way of a *winter* residence; for in northern climes, one great object of the pulmonic invalid is to avoid the abrupt transition of the seasons from summer to winter. On the coast of New England, for instance, the ratio of catarrh per 1000 is in the third quarter 36, and in the fourth 85; and consequently the respiratory organs even when normal, are peculiarly susceptible, at this period, to morbid action; but if the pulmonic, at the approach of winter, seeks the climate of East Florida, he will find there, in the fourth quarter, a ratio even lower than that of the third quarter on the coast of New England.

Did space permit, it might be interesting to carry out these views in relation to pneumonia, pleuritis, and phthisis pulmonalis, as elucidated by the statistics of the United States Army. In reference to the last, it will suffice to say that its ratio seems to have no direct relation with the other diseases of this class; for, although much under the influence of season and climate, yet it is still more under the control of other agents. Chronic bronchitis, it is very probable, acknowledges the general law, whilst the deviation is caused by cases of a tubercular nature.

Another important law developed by the statistics of the United States troops is, that, in those climates in which a high or a low temperature predominates, the ratio of pulmonary diseases is lower than in the intervening region characterized by the extremes of both. In regard to pleuritis, pneumonia, and phthisis pulmonalis, it is found to be so in every respect; and, so far as catarrhal diseases are concerned, the law holds good on the coast, Florida and New England having lower ratios than the middle coast. In Europe it has also been ascertained that phthisis pulmonalis prevails less in Sweden and along the Mediterranean countries than in the intervening regions.

With these remarks, we are prepared to consider more in detail the results and deductions of the Reporter, as expressed in the several quotations made during the progress of this review. To enable the reader to do the Reporter the fullest justice in regard to the comparisons instituted between England and the West Indies, we would ask him to re-examine the extracts on pages 434, 439, 440–1, 445, and 446, as well as the tabular abstract on page 466. In addition to the objections already made to England as a standard of comparison, we have now to add that the ratios of that command which gives the *lowest* results are taken as the comparative tests, by which all the deductions in reference to pulmonary diseases become still further vitiated. A glance at the table will show that the ratio of mortality from the class of pulmonary diseases in England varies from $7\frac{7}{10}$ to $4\frac{1}{10}$, the former of which is in all cases assumed as the standard. The high ratio of the foot guards, it is true, is set aside as an "exception," because it appears "*attributable to other causes than the climate of the metropolis;*" but, on the other hand, we find that the comparison is made with the *highest* ratio among the white troops in the West Indies, notwithstanding he thinks it "*not attributable to climate only, but also to some peculiarity from which officers are exempt!*" As the mortality among the enlisted men from this class of diseases is four or five times greater than among the officers, the result cannot be wholly ascribed to general causes; and, as the same morbid agents may be in operation in the Windward and Leeward Command as among the foot guards, it is unfair to suppress the one and show forth the other. Reasoning from general principles, it was shown that the ratio of pulmonary diseases ought not to be very much higher in England than in the West Indies; and this relation obtains in reality. Taking the aggregate strength and aggregate mortality from diseases of the lungs of all the white troops in the West Indies, and the same of all the commands in England, the result is in favour of the former. In the United Kingdom, the annual mortality per 1000 of strength is $10\frac{1}{10}$, whilst in the West Indies the ratio is only $3\frac{3}{10}$. Contrary to the deductions of the Reporter, it is also seen that the mortality from hæmoptysis and phthisis pulmonalis, as well as from pleuritis and pneumonia, is lower in the latter. The average of pulmonary cases under treatment is found, likewise, much lower in the West Indies, the annual ratio per 1000 being as 103 to 149, notwithstanding the latter is the ratio of the dragoon guards and dragoons, which give the lowest mortality, it being impracticable to determine from the tables the ratio of cases treated in the other commands.

It is thus seen that by assuming the *highest* average in one command and the *lowest* in another, unwarranted conclusions have been deduced. Were even the mortality from pulmonary diseases in the West Indies higher than in England, it would not be surprising; for here are men from a northern clime exposed, through all seasons, to the influence of a high temperature; and as this mortality arises chiefly from phthisis pulmonalis, which the Reporter maintains to be of tubercular origin, the disease is doubtless often induced by the deterioration which the constitution undergoes, especially in cases of intemperate habits, from repeated attacks of febrile and chronic intestinal affections—an opinion warranted by the statistics of the United States army. This may be regarded as a prolific source of pulmonary consumption among the British troops in the hot climate of the West Indies. An English soldier sent to these islands, enlisted for life, with no hope of escape but in the grave—labouring under the influence of the depressing passions, as is manifest from the extremely high ratio of suicides—reckless in his habits, both moral and physical—and exposed to the unceasing agency of those morbific causes by which the vital energies are gradually exhausted—is peculiarly liable, especially when predisposed, to the development of this disease. This view is corroborated by the fact that officers in the West Indies—a class of men animated by the opposite feelings—enjoy a comparative exemption from this malady, which is a circumstance the more remarkable when it is considered how carefully recruits, more especially as regards the chest, are examined, whilst officers undergo no personal examination.

The prevailing idea in regard to the advantages of acclimatization is disproved by statistical investigations, not only in the West Indies, but all other climates in which British troops are stationed.* As no length of residence is of any avail in diminishing the liability to the malignant diseases of the West Indies, it follows that the causes assumed as exercising a powerful agency in the production of phthisis pulmonalis, are uniformly progressive in their fatal tendency. Labouring for years under the most insidious forms of disease, the system becomes less fitted to resist morbific agents than that of him who brings to this climate the full health and vigour of an unimpaired northern constitution. The conclusion of the Reporter that the great susceptibility of troops to consumption in the West Indies, "is not attributable to climate only, but also to some peculiarity in their condition from which officers are exempt," finds, it is believed, an adequate explanation in the operation of the causes here detailed.

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* "Noxious agents or causes of mortality," says a late writer, (On the enlisting, discharging, and pensioning of soldiers. By Henry Marshall, F. R. S. E., deputy inspector-general of army hospitals,) "exist in all countries, and these causes of mortality will have greater or less influence upon the human body, in proportion to its conservative powers. The rate of mortality among a body of troops is therefore, in some degree, a test of the existence, and a measure of the power of these destructive agents. It has long been supposed that the conservative powers of the constitution acquired

That the West Indies offer no advantages as a winter residence to the pulmonary invalid, may, at first view, be inferred; but this is more apparent than real, inasmuch as it has been shown that these diseases, as a class, are as much under the influence of the seasons as intermittent fever, and that consequently one great object of the pulmonic invalid in seeking a southern clime as a winter residence, is to avoid the abrupt transition of summer into winter. That tubercular consumption might be hastened to its fatal issue by a continuous residence in these islands is probable, but this objection has no reference to a mere *winter* residence. Notwithstanding the Reporter directs attention to "the baneful influence of the climate of the West Indies in accelerating the progress of consumption," it is found that the annual ratio of mortality from hæmoptysis and phthisis pulmonalis is only $6\frac{2}{10}$ per 1000, exclusive of those sent home as invalids, whilst that of the United Kingdom, is $8\frac{2}{10}$. Now could we institute a comparison between the civil population of England and the native white inhabitants of the West Indies, the comparative results might be deemed correct.

Next in order come the Mediterranean Commands. In *Gibraltar*, notwithstanding the unfavourable views taken of this climate by the Reporter, (see *ante* p. 449,) the annual ratio of mortality from all pulmonary diseases is only $5\frac{3}{10}$ per 1000, which is little more than half the average presented in the United Kingdom. From hæmoptysis and phthisis pulmenalis, the mortality in the former is $3\frac{6}{10}$, and in the latter $8\frac{2}{10}$; but as many of the consumptive patients were invalided the Reporter thinks the ratio for Gibraltar too low. In regard to the correctness of the opinion that inflammation of the lungs is "much more" frequent at Gibraltar than in England, we are unable to judge, as the Reporter in his tabular abstracts of the troops at home, with the exception of the dragoon guards and dragoons, does not give the number treated; but one fact appears from our table, p. 466, viz. that the mortality from this cause is one third less than in England. The average of all pulmonary cases treated at Gibraltar is also lower, even taking that of the dragoon guards and dragoons, the *lowest* ratio, as the standard of comparison.

The island of *Malta*, notwithstanding the Reporter thinks it "by no means favourable to persons predisposed to" pulmonary diseases, (*ante* p. 451

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strength by length of residence in unhealthy climates, but this inference or conjecture derives no confirmation from statistical investigations." In Jamaica, for example, a station in which the strength is usually kept up by young recruits varying from 19 to 21 years of age—the annual ratio of mortality among soldiers between the ages of 18 and 25, is 70 per 1000, between 25 and 33, 107, between 33 and 40, 131, and between 40 and 50, 128 per 1000. This is the case "not only in regard to Jamaica," adds the same writer, "but also in regard to the Windward and Leeward Island station, and uniformly in all the other stations, both in the temperate and torrid zones."

–2,) presents an annual ratio of mortality by this class of 6 per 1000, whilst that of England is $10\frac{1}{10}$. From hæmoptysis and phthisis pulmonalis, the mortality is, $3\frac{7}{10}$, which is not one half as high as in England; but in these comparisons, some allowances must be made for the invaliding of consumptive patients. From pleuritis and pneumonia, the mortality is also higher in England, notwithstanding the Reporter asserts "*that in the mild climate of Malta they are twice as fatal.*" (*Ante* p. 455–6.)

The Reporter next inquires into the extent of pulmonary diseases among the civil population of Malta—an investigation which leads him to the following conclusion:—" Nor. is the fatal influence of diseases of the lungs confined to the troops alone; it extends in a *corresponding degree* to the inhabitants." As this deduction is wholly unwarranted, it again becomes our duty to expose the fallacy of his reasoning. The average population is 100,270, and the tabular abstract extends over a period of 13 years. From diseases of the lungs, the aggregate of deaths is 6664, among which are reported 1363 of phthisis pulmonalis, and 2786 of consumption. The ratio of deaths from this class of diseases among all ages, is, therefore, about 5¼ per 1000 of the population. This ratio then, according to the Reporter's own calculation, is only half as high as in England; but it will be observed that deaths are reported by the Maltese medical practitioners under the different heads of consumption and phthisis pulmonalis. "The former," the Reporter says, "is understood principally to refer to that class of consumptive cases more generally designated as *marasmus*, which term has been adopted in the returns since 1831. * * * They are understood to have occurred *principally among children and old persons*, and many of them may not have been directly attributable to diseases of the lungs, though, as we possess no means of distinguishing the *exceptions*, it has become necessary to include them under that class." The *exceptions*, in this case, evidently constitute the rule. In his anxiety to establish his favourite views, the Reporter is not content to include under the class of diseases of the lungs the cases of marasmus reported as consumption prior to 1831, but he also takes those *reported as marasmus* subsequently to that period. Hence it is no ways surprising that Sir Andrew Halliday, Inspector-General of Hospitals, deplores the strange fact that the duty of collating these statistics should have been "delegated to a captain in the army destitute of professional knowledge." Although we are free to concede that Major Tulloch has performed his task with great ability, always excepting those deductions which involve medical opinions, yet we are not the less convinced that the old adage—"ne sutor ultra crepidam"—is a good one.

But to return. Excluding, therefore, the 2786 fatal cases of marasmus, or consumption, which "*occurred principally among children and old persons*," the ratio of mortality from hæmoptysis and phthisis pulmonalis is reduced to $1\frac{1}{10}$, (about one-eighth of the average in England,) and that from all diseases of the lungs, to 3 per 1000. The fatality of pleuritis and pneumonia is not half as great as among the troops. It is thus seen that the mortality from all diseases of the lungs among the civil population, contrary to the deduction of the Reporter, that it is in a "corresponding degree," is not half as high as among the troops, and not one-third as great as the average of the several commands in the United Kingdom. But as truth, it is said, never lies in extremes, so it may be well to take the ratio of hæmoptysis and phthisis pulmonalis, including *one-half* of the cases of marasmus. By this computation, the ratio is $2\frac{2}{10}$, which is much lower than among the military, and only one-fourth of the average in England. These results find corroboration in the fact that among the "Malta Fencibles"—a corps composed entirely of natives, the annual ratio of mortality from all causes is only 9 per 1000, being less than half as high as that of the foreign troops.

The Ionian Islands.—This group, remarkable for tempestuous weather and sudden and frequent alternations of temperature, gives a lower ratio than Malta or Gibraltar, (*ante* p. 454.) The mortality from all diseases of the lungs is $4\frac{6}{10}$ per 1000, and including the invalids sent to Malta, $4\frac{8}{10}$—a mean not half as high as that of the United Kingdom. The ratio of cases treated is also much higher in England, aye, even in the dragoon guards and dragoons, being as 149 to 90. These results, considering the contrast in the climate of Malta and the Ionian islands, seem to corroborate the laws established by the statistics of the United States army, so far as regards mere variableness of temperature.

This view of the results of the several Mediterranean commands leads to conclusions diametrically adverse to those deduced by the Reporter, as exhibited in the quotations on pages 455–6. We are wholly at a loss to perceive "the interesting fact that, except the Ionian Islands, the liability of troops to consumption in the Mediterranean stations is even greater than in the United Kingdom," or that, if due allowance be made, "the proportion of deaths also, among those attacked by consumption, will be found fully as high." On the contrary, we find, (see table, p. 466,) that excluding those invalided, of which the mortality is unknown, the ratio of deaths from hæmoptysis and phthisis pulmonalis, in the Mediterranean stations per 1000, is $3\frac{4}{10}$, and the mortality from all the diseases of the lungs, $5\frac{2}{10}$; whilst in England, the former is $8\frac{2}{10}$, and the latter $10\frac{1}{10}$. But as the ratio invalided is not more than 4 per 1000 annually, it follows that if all died, still the average is lower in the Mediterranean. We are consequently wholly unable to discover the "striking contradiction to the popular idea," more especially when we call to mind the fact that these ratios are exceedingly low among the Maltese natives. "That inflammatory affections of the lungs are nearly twice as prevalent" in the Mediterranean as in England, and that in the "mild climate of Malta they are also twice as fatal," is a deduction that we have completely disproved; and in respect to the civil population of Malta, we have in truth more than reversed the position. Instead, therefore, of its "being by no means likely that any beneficial influence can be exerted by the climate itself" in pulmonary diseases, it is satisfactorily shown that it is even advantageous as a continuous residence. To the pulmonic invalid from the excessive climates of the middle regions of Europe, who seeks this region merely as a winter residence, the beneficial results must consequently be incalculable. Admitting even the correctness of the Reporter's results, they would not militate against the laws established in relation to the relative influence of the seasons.

The last command investigated is British America. In the *Bermudas*, lying about 600 miles east of South Carolina, the annual ratio of mortality from diseases of the lungs is $7\frac{3}{18}$ per 1000. This average, though higher than in the Mediterranean stations, is lower than in England. Notwithstanding the uniformity of temperature which obtains in this group of islands, the summers are exceedingly hot, even more so than in the West Indies.

In Nova Scotia and New Brunswick, as well as Upper and Lower Canada, the ratio of admissions and deaths from diseases of the lungs is considerably lower than in the United Kingdom, (*ante* p. 459, 462, and 464.) As this is a region in which a low temperature prevails, the result is no ways surprising; for notwithstanding in Canada, "the variation sometimes exceeds 50° in the course of a few hours," the law that pulmonary diseases are less prevalent in those regions in which a high or a low temperature predominates than in the intervening region characterized by the extremes of both, has been abundantly established in the systems of climate pertaining to the United States. In the harmony of these results, we perceive the order which reigns throughout nature; and these laws find confirmation in Europe, inasmuch as the returns of Sweden do not exhibit a higher ratio of pulmonary diseases than the climate of the Mediterranean. It has also been shown by statistical facts, by M. Andral, that phthisis pulmonalis is more prevalent in the middle regions of Europe than at either extreme.

The more recent statistical reports of Major Tulloch "On the sickness, mortality, and invaliding among the troops in Western Africa, St. Helena, the Cape of Good Hope, and the Mauritius," will not now be noticed; but we may add that the results in regard to pulmonary diseases afford no evidence corroborative of the Reporter's favourite views. As all these commands belong to the class of mild or uniform climates, the results are much in favour of southern latitudes; for whilst in England, the annual mortality from all diseases of the lungs per 1000 is $10\frac{1}{10}$, among the troops on the western coast of Africa, it is $4\frac{9}{10}$, in St. Helena $3\frac{2}{10}$, and at the Cape of Good Hope $3\frac{9}{10}$. At the Mauritius, the average is nearly twice as high as at the Cape of Good Hope; but as the ratio of pulmonary cases treated in the two commands is nearly the same, the great source of mortality in the former arising from consumption, we have another evidence of the fact that the ratio of phthisis pulmonalis in general and the other diseases of the lungs have no apparent relation. We are also told that "among 71,850 native troops serving in the Madras Presidency, the deaths by every description of disease of the lungs did not, on the average of five years, exceed *one per thousand* of the strength annually." This ratio, which is only one-tenth as high as in Great Britain, may be considered, unlike that of the island of Malta, a fair standard of mortality from pulmonary diseases among native troops.

It is thus seen that the conclusion of the Reporter, that the class of pulmonary diseases is more prevalent and fatal in southern than northern latitudes, is the result of hasty generalization, or rather that it has arisen from a classification of climates on mere latitude without reference to the phenomena of temperature induced by local causes. Although the Reporter has, in some measure, set the world right in regard to a *theoretical* error, he has unfortunately, at the same time, led it into a *practical* one. His first error was assuming the climate of England as the standard of comparison—the second, comparing the *lowest* average in one command with the *highest* in another—and the third, basing his deductions on the *annual* results without reference to the relative influence of the *seasons*. We have devoted the more attention to this subject in consideration of its importance to the pulmonary invalid, and from the conviction that the evil influence of false doctrines bears a direct ratio to the character of the authority whence it emanates. S. F.

BIBLIOGRAPHICAL NOTICES.

Art. XI.—*The Library of Practical Medicine—A System of Practical Medicine, comprised in a series of Original Dissertations.* Arranged and edited by Alexander Tweedie, M. D., F. R. S., &c. &c. *Diseases of the Organs of Respiration.* 8vo., pp. 575. Philadelphia: Lea & Blanchard, 1841.

The subjects embraced in the volume before us, which forms the third of the Library of Practical Medicine, are treated in a far more elaborate manner, than those of either of the two preceding volumes. This, while it may in some slight degree detract from its usefulness as a mere text book, renders it unquestionably a more valuable acquisition to the library of the practising physician. The diseases of which it treats are highly important; as well from the frequency of their occurrence throughout a large portion of the United States, as from their very serious character under all circumstances, but more especially when neglected or mismanaged in their earlier stages; there are few, likewise, in relation to a correct acquaintance with the pathology, diagnosis and proper therapeutical management of which, greater advances have been made of late years.

We feel no disposition to overrate, in the least degree, the merits of the present work—we are convinced, however, that all who will examine it with care, will agree with us in pronouncing it one of the most complete and accurate summaries of the present state of medical knowledge in reference to the pathology and treatment of the affections of the respiratory organs and of the more prominent diseases of the heart, that has yet appeared—and one better calculated to convey to every class of practitioners, exact and positive information on these important topics, than any of the systems of practical medicine in common use.

The account of the diseases of the respiratory system, with the exception of influenza and asphyxia, is by Dr. Williams of the London University; that of the diseases of the heart is contributed exclusively by Dr. Joy of Dublin.

The former of these gentlemen is already very favourably known to the medical public, by his former valuable publications on the diseases of which he here treats, and by the attention he has paid to the investigation of the physical signs of the affections of the thoracic organs generally—and although the name of Dr. Joy may be less familiar to our readers, he has proved himself fully competent to the task which he has undertaken—by a perfect familiarity with the best authorities—great discrimination in the selection of his facts, and no trifling skill in their exposition and arrangement.

Introductory to the special consideration of the diseases of the organs of respiration, we are presented with a very excellent and perspicuous account of the means of diagnosis in the affections of the lungs;—1st, By the examination of the chest through its physical properties, and 2d, by its examination through the vital properties or functions of its organs. Both sets of signs thus derived —the physical and vital—Dr. Williams very properly remarks, have their value; and he has taken especial care to point out the modes of appreciating each in the study and treatment of the special diseases—to show, as far as possible, their relative value, by examining them more fundamentally than has generally been done—and while due respect is paid to authentic records of experience, of whatever kind, to make them still more profitable and instructive by careful analysis and generalization.

The various means of examining the physical condition of the chest, whether by vision, tact or hearing, are described, though concisely, yet with great clearness and accuracy, and their comparative value carefully noted; while an able analysis is given of the several vital or general symptoms of disease of the lungs, with the view to determine their nature and varieties, and their value in pointing out the seat, character, extent, and proper treatment of the various lesions of the pulmonary organs.

The remarks of Dr. Williams, in relation to the several vital or physiological symptoms—dyspnœa, cough, expectoration and pain—immediately dependent upon certain morbid conditions of the respiratory apparatus, as well as the short notice he has presented of the nature and value of the symptoms, which disease of this apparatus develops in the functions of other organs, are in the highest degree interesting, and afford, in conjunction with his analysis of the physical signs, a very appropriate and necessary introduction to the study of the individual diseases of the lungs and their appendages. The ready and correct appreciation of the diagnostic phenomena of which they cannot fail very materially to facilitate.

The concluding observations of the author, on the subject of diagnosis, are particularly worthy of attention—indicating, in general terms, the exact relative value of the physical and vital phenomena of pulmonary disease, and offering a few brief, but important hints as to the proper method of investigating its seat, nature and extent.

"On taking a rational review of the general symptoms in comparison with the physical signs, we must come to the conclusion that as diagnostic means, the general symptoms fall far short of the physical signs. But it is not to be supposed that, because the general symptoms are often comparatively of little aid in diagnosis, we are to neglect the study of them. They are almost always of great importance in prognosis and practice. The physical signs more surely show how the pectoral organs suffer; but having discovered this, to the general symptoms we must look for how the system suffers; and as the symptom often closely sympathizes with the injured organ, we may through them often watch the first turns of the disease, before the change in the organ becomes physically appreciable. In the general symptoms, we seek for those *critical* phenomena, which, although sometimes deceptive, yet generally announce the tendency of the disease to one or other mode of termination. In them we study the vital forces and properties with which nature works, and the signs of what nature can do; and in our method of treatment these become the standards to which we direct, and by which we modify our remedies. When we treat a patient with peripneumony or catarrh, we do not apply our remedies merely to the local lesions, inflamed vessels, or a discharging membrane; we study the system at large, we examine other functions through the general symptoms, and we direct our treatment with due reference to indications from all these several sources. We see, then, that the mere stethoscopist is but ill fitted to practise medicine. He may justly boast of his skill in diagnosis; his place of triumph will be the dissecting room, where he can show the lesions that he had detected, but his practice at the bed side will be unsuccessful in proportion as local lesions vary in their general relations, and in the conditions of the constitution, or of other functions that may accompany them. The judicious physician will not omit to study the condition of the vital properties which are exhibited in the general symptoms, as well as the local physical changes which have been already produced, and whilst he chiefly confides in the physical signs to indicate and measure the present local lesions, he carefully watches, in the general symptoms, the tendencies of those properties and functions which are capable of increasing or modifying these lesions, and are equally liable to be affected by them. The general symptoms being less intelligible and certain than the physical signs, need more experience to enable us to appreciate them; but we have found that even these also may be *rationally* studied, and may derive a light from a knowledge of physiology and the physical signs, which experience alone could never throw on them."

The whole of this very excellent introductory section will be found replete with valuable instruction by the young and inexperienced practitioner, while even those who are ranked among the elders of the profession, cannot fail to derive from it many useful practical hints illustrative or confirmatory of their own experience.

The first of the special diseases of the respiratory organs treated of is Laryngitis, in its acute and chronic forms. The description of this affection is very ably drawn up, and the results of careful observation, in relation to its causes and character, are given with great clearness and accuracy.

In regard to the treatment of Laryngitis, in its acute form, Dr. Williams lays down three leading indications: "1. To prevent effusion by reducing inflammatory action. 2. Effusion having taken place, to prevent the obstruction which it causes to respiration from producing mortal injury to the functions. 3. To promote the removal of the effused matter."

"Laryngitis," he remarks, "destroys life, not by the extent or the vitality of the organ which it occupies, but by closing as it were the door of the breathing apparatus; by opening another door, we render the disease comparatively trivial, and it may then be deliberately attacked by mercurial and other remedies, or, if slighter, even be allowed to run its course, which commonly ends in muco-purulent secretion. When the operation has been delayed until asphyxia approaches, it will have less chance of success, but should still be tried; for a very few instances are on record where it succeeded at almost the last extremity."

We are aware that by Baillie, Cheyne and others, the operation of bronchotomy has been recommended in cases of Laryngeal inflammation, in which other remedies have failed to afford relief, and that some of the surgical writers urge its early performance, as soon, Mr. Lawrence directs, as the symptoms enable us to determine the nature of the disease. But we are not convinced that the results of general experience are so decidedly in favour of the efficacy of the operation in cases of Laryngitis, performed under the most favourable circumstances, as to warrant the strong terms in which its good effects are laid down by our author. It is certain that little benefit can be expected from bronchotomy in this disease, when too long delayed, but even when resorted to at the period indicated by Dr. Williams, it will very often be found to afford only temporary relief.

The account of the chronic form of laryngitis, its symptoms, pathology and treatment, is full and interesting. In a note by the American editor, appended to the chapter, the interesting fact of the relation of this form of laryngeal inflammation to pulmonary phthisis, either as a cause of the latter, as a concurrent affection, or as a mere secondary lesion, occurring long after phthisis has set in, is concisely pointed out.

Tracheitis, or croup, is described with great accuracy, and the treatment which experience has shown to be the best adapted to arrest its progress, fully and clearly detailed. In regard to the pathology of croup, we entirely agree with Dr. Williams, that the view entertained by him, is that which, in the present state of our knowledge, seems most tenable, and which best comports with the whole history of the disease and the effects of remedies on it.

"The pathological history of Croup," he remarks, "is quite intelligible. The inflammation may commence at first in the submucous tissue, or it may have been first catarrhal, in which very common case, catarrhal symptoms precede those of croup. The inflammation immediately causes increased sensibility of the contractile fibres, and interstitial effusion in the lining of the trachea and larynx; hence results the constriction, partly spasmodic, partly from swelling of the air tubes; and hence the croupy inspiration and cough, and the hoarseness. Afterwards lymph is poured out in a liquid state, and becoming concrete, forms the false membrane, another cause of obstruction to the passage of the air, both directly by its bulk, and also by the spasmodic contraction which its presence causes in the muscular fibres of the tube. The latter cause acts especially where the false membrane reaches to the larynx, and excites its very irritable muscles; in such cases, the paroxysms of dyspnœa and cough are frightfully severe and suffocating. The share which spasm has in causing the dyspnœa may be inferred from the fact, that in no case have the air passages been found so much blocked by the albuminous secretion as to account for the amount of the obstruction; and in many cases the constriction has appeared greatest, where little or no exudation was found after death. It must not be forgotten, however, that œdematous swelling, like that of erysipelas, may disappear after death. The separation of the concrete matter from the tube, and the prevention of its becoming permanently adherent and organized, is doubtless owing to the mucous secretion and the continued motions of the tube. In cases where the albuminous effusion is less plastic, or the follicular mucous secretion more abundant, the matter may be liquid and purulent, and this generally takes place in the bronchitic variety. The collapse which takes place towards the fatal termination of croup is, like that in bronchitis, to be ascribed to the imperfect state of the function of respiration, and the consequent injurious effect on the vital powers."

A short but highly interesting account is presented of the Laryngismus Stridulus, or spasmodic croup of infants. This affection is of more frequent occurrence than is generally supposed, while its true character is often mistaken by parents as well as physicians. In many cases it is an affectien, it is true, of little moment, depending upon some transient irritation which has been reflected upon the constrictor muscles of the glottis; it, nevertheless, in every instance, claims the serious attention of the practitioner, from the fact of its being occasionally the forerunner of violent convulsions, or some other formidable symptom of cerebral disease. A brief notice of the principal facts known in relation to its pathology, will be found in the chapter before us, together with a judicious summary of the remedies to be employed in order to prevent a recurrence of the paroxysms.

Under the head of Catarrhal inflammations, are considered the ordinary forms of acute catarrh, coryza and mild bronchitis. For the removal of these forms of disease, which are particularly interesting from their extreme frequency, particularly in situations marked by great variableness in the atmospherical temperature, Dr. Williams strongly recommends the simple abstinence from all kinds of liquid. This plan of treating acute catarrh, originated with that gentleman, who states that he has practised it in his own person, for the last twelve years, with such success, that colds and coughs that used to continue for several weeks, have been generally cured in two or three days.

"It is very essential for the success of this plan of treatment," Dr. W. remarks, "that it should be applied in the early irritative stage of the complaint, and it is most effectual when the catarrh affects chiefly the nasal membrane.

"If there be any fever, and especially if the state of the bowels require it, an aperient, with an antimonial, should be given; for this favours that free state of the secretions on which, as we have seen, the efficacy of the dry plan depends. In milder cases, this is not necessary. For similar reasons, it is desirable that the solid food be not of a too rich or heating kind; for this undiluted by liquid, might be apt to disagree. Bread, or any consistent farinaceous food, with a little butter, vegetables, white fish, white or gelatinous meats, light puddings, and dried fruits, are suitable articles for a dry diet. Although a total abstinence from liquids is the most effectual, yet, taking about a tablespoonful of tea or milk, with breakfast and the evening meal, and a wineglass full of water on going to bed, does not prevent the success of the plan, whilst it diminishes its discomfort. But the suffering from this voluntary privation is trifling in comparison with that from a severe cold; in fact, except with those who are habitually thirsty, it is rather negative than positive, arising from the imperfect enjoyment of eating without drinking. A great advantage of this plan is, that it does not interfere with common active pursuits, and needs no nursing or confinement. In fact, if care be taken to prevent the surface from being chilled, exercise in the open air promotes the success of the plan, by favouring the natural secretions. The time necessary to effect a cure by the dry plan will vary in different individuals, according to the present quantity of their circulating fluid, the activity of their secretions, and the intensity of the catarrhal disease; and also, somewhat according to the hygrometric state of the air, longer time being always required when the weather is cold and damp; on the average, forty-eight hours of abstinence will be sufficient. We have known thirty-six hours enough; but some severe and obstinate cases require three days. The period may generally be somewhat shortened by exercise and warm clothing, or lying in bed, or by commencing with a purgative, or by any other dry means of increasing the natural secretions. The cure is not complete till all stuffing is gone, and nothing but a consistent mucus is formed, without irritation in the nasal or bronchial passages."

The account of the acute and chronic forms of bronchitis, of bronchorrhœa, or the pituitous catarrh of Laennec, and of bronchial congestion or congestive asthma, are sufficiently full and accurate, presenting a very able and interesting exposition of the present state of our knowledge in relation to their pathology and treatment.

The ensuing chapters are devoted to a consideration of spasmodic asthma and atonic or paralytic dyspnœa, hooping cough and neuralgia or morbid sensibility of the air cells—diseases, which, according to Dr. W. depend upon a morbid defect or excess in the operation of the nervous and muscular fibres of the air tubes. Spasmodic asthma, Dr. W. attributes to a spasmodic contraction of the circular fibres of the bronchi—of a purely nervous character, or, as is more generally the case, associated with a congested state of the bronchial vessels, ending in secretion. The spasmodic contraction of the bronchi being commonly tonic or permanent, but increased at intervals, thus inducing the paroxysmal augmentation of the disease. The characteristic phenomena of this form of dyspnœa are clearly defined, and a satisfactory account given of the remedies, by which it has been found to be most successfully combatted.

Of that form of dyspnœa which arises from defective contractility of the bronchial tubes, in consequence of weakness or paralysis of their circular fibres, a very short notice is here given, the subject being again noticed under the head of dilated bronchi and air cells.

Hooping cough, the pathology of which has given rise to so much discussion, Dr. W. believes to originate in a specific irritation (almost always inflammatory at first) of the lining membrane of the upper portions of the air passages.

"This irritation is, in the first stage, constant, and accompanied with cough and expectoration, like those of common inflammatory catarrh—but in the second stage it peculiarly increases the irritability of the laryngeal constrictor and bronchial muscles, and of the nerves which excite the contractions of these, as well as of the expiratory muscles, which are sympathetically associated with them—those in fact which are concerned in the act of coughing. The peculiar cough of pertussis, resembles that excited by a foreign body directly irritating the glottis; in fact it is properly called *pertussis*, for it consists of an exaggeration of all the actions of an ordinary cough and of nothing more; and there is no more reason for seeking its cause in the brain or spinal marrow, than there is for referring excessive vomiting or dysenteric straining to this seat. It is unnecessary to go further than the respiratory apparatus for an explanation of the phenomena of hooping cough. The irritation which at first extends to the vessels and is more constant, becomes afterwards purely nervous, and like other local nervous affections, such as neuralgia, spasms, nervous colic, &c. manifests its effects only occasionally, perhaps under the influence of some additional exciting cause. The various complications which so much increase the danger of hooping cough, we would regard chiefly as the effects of the violent cough, sometimes assisted by predispositions to particular diseases or by co-operating causes. Any one who has witnessed the severe paroxysms of hooping cough, can scarcely wonder that it may produce in the head, in the lungs and in the abdomen, serious congestions, which previous tendencies or additional exciting causes, may readily convert into inflammation and its effects—hydrocephalus, pneumonia and intestinal disease."

Dr. W. considers that there is as much evidence in favour of the infectious properties of this as there is of any other disease—a proposition, to the accuracy of which, we can by no means accede.

A concise notice follows of neuralgia and the several structural lesions of the air tubes—as full perhaps as the present state of our knowledge in relation to these affections will permit.

A very elaborate exposition is given of the pathological history, symptoms and signs of acute and chronic pleurisy—of empyema, its phenomena and modes of termination, and of the treatment of the disease in its acute and chronic forms, and of the purulent effusion into the cavity of the pleura, consequent upon the latter. In a note appended by the American editor, the connection of pleurisy with tuberculous diseases of the lungs, and of the pleura itself, is pointed out. In this chapter, the reader will find all the information necessary to lead him to a correct knowledge of the character of pleuritic inflammation—of the phenomena, as well vital as physical, which denote its presence, extent and progress, and of the remedial measures appropriate to its several stages.

The same remark may be made also, in reference to the several chapters which treat of the proper pulmonary affections—pneumonia, pulmonary œdema, dilatation of the air cells, or pulmonary emphysema, and pulmonary consumption, with the two additional chapters contributed by the American editor, the one on pneumonia of children, and the other on gangrene of the lungs. This portion of the work presents, probably, one of the best compendiums of the present state of knowledge in relation to the pathology, diagnostic signs, and therapeutical management of the diseases enumerated, whether for the use of the student and the young practitioner, or to refresh the memories, and improve the knowledge of such, as from the extent of their engagements, the remoteness of their situation, or their contracted means, are unable to consult the various original sources from which the facts comprised in the chapters before us, have been carefully and judiciously selected.

It would be impossible for us, even were such a course expedient, so far to extend the present notice, as would be necessary, in order to present a satisfactory view of the more important and interesting features of the summary before us. Well persuaded that the work itself will shortly find a place in the libraries of most of our readers, we shall content ourselves with merely directing their attention to the very clear and satisfactory account given by Dr. Williams, of the anatomical character of pneumonia, and his judicious remarks in relation to the proper treatment of its several forms and stages—to the concise, but excellent account presented by Dr. Gerhard, of the character and treatment of pneumonic inflammation in children, and to the interesting observations of the same gentleman, on gangrene of the lungs—especially that resulting immediately from a vitiated condition of the fluids.

The chapter on tuberculous disease of the lungs, or pulmonary consumption, which occupies upwards of fifty-four pages, is one of the most elaborate in the volume. It comprises an account of all those forms of disease of the lungs which arise from the formation of tuberculous matter, or of depositions and indurations which are allied to it, in the substance of these organs, and exhibits a complete and masterly exposition of every fact of importance in regard to their pathology, diagnosis, etiology, treatment and prevention. We are acquainted with no source from which a more correct general view may be derived, of all that is known respecting the character, causes and phenomena of these insidious and unmanageable forms of disease, and the remedies which experience has found to be the most effectual for their amelioration or removal.

After a brief chapter on malignant growths in the lungs, and one still shorter on diseases of the bronchial glands, there follows a tolerably extended account, by Dr. Thompson, of Influenza. No reason is given for the separation of this disease from the catarrhal affections, with which it is so closely related. Agreeably to Dr. T.'s own showing, it differs from bronchitis only in the latter being generally induced by atmospheric changes, and attacking the predisposed, while the influenza has comparatively little reference to changes of weather, affects all individuals nearly equally, and is attended with more local pain and general debility than is proportionate to the severity of the catarrhal symptoms.

The following extract exhibits the views entertained by Dr. T. as to the real nature of the disease:—

"In the few cases of death which have occurred from simple influenza, the following are the chief appearances which have been observed:—The mucous membrane of the larynx and bronchi has been found of a deep red colour, flakes of lymph have been sometimes observed on the chordæ vocales and in the ventricles, and the trachea has been injected and covered with glassy looking mucus; the lungs surcharged with serous and mucous fluid, and having portions of their lower lobes engorged and sometimes consolidated.

"The danger, in extreme cases of influenza, appears to arise from an excess of mucus, preventing the due arterialization of the blood. The difficulty and rapidity of respiration are, however, out of all proportion to the quantity of secretion, or even to the amount of inflammation, and the dyspnœa is sometimes intermittent; and this circumstance cannot easily be explained, except by supposing that the cause of the disease must operate, by producing an impression on the vital energy of the lungs, analogous to that occasioned by cutting the nervus vagus: and we may reasonably conjecture that influenza depends on an influence exerted on the nervous system, especially on that part of it having most relation to the bronchial mucous membrane, tending to elicit any latent predisposition to disease, and modified in its character by varieties of constitution, as well as by peculiarities of climate and other external conditions.

"This opinion derives support from the liability, so frequent in this complaint, to derangement in a great variety of organs, as well as from the occasional occurrence of inflammation of the spinal chord, and of inflammation or other affections of the brain. The effects of such a shock thus communicated to the nervous system, may be expected to develope themselves in the weakest organ, and to vary according to collateral circumstances. Thus, in the same epidemic, one patient will suffer from meningitis, another from enteritis, a third from rheumatic affections. If a sudden increase of temperature succeed to frost or snow, pneumonia will frequently be found associated with the complaint, whilst exposure to fatigue and mental anxiety will increase the liability to erysipelatous complications."

We have neither space nor inclination to enter into an examination of how far these views are borne out by the leading phenomena of the disease, and the circumstances under which it has been found ordinarily to prevail as an epidemic. They are at least plausible, notwithstanding they afford us little or no assistance in determining the proper measures to be pursued for the prevention or cure of the disease.

In the chapter before us will be found a very accurate description of influenza and of its appropriate treatment, together with a sketch of its principal visitations, and an interesting inquiry into the probable sources of the epidemic.

The consideration of the diseases of the respiratory organs is concluded by an able and very complete account of asphyxia. The subject is fully treated in all its important bearings, by Dr. Carpenter of the Bristol Medical School. The causes, nature and results of suspended aëration of the blood, are pointed out with great clearness, with an interesting notice of the principal morbid conditions of the animal organism, which terminate in death through the medium of asphyxia, as well as of others, which the continuance of imperfect respiration would be liable to produce. The phenomena attendant upon asphyxia, from strangulation, suspension and submersion, are examined in detail; the leading facts connected with this subject, collected of late years, especially in reference to the grave medico-legal questions involved in it, were carefully noted, while a very accurate and satisfactory account is given of the treatment of asphyxia, appropriate to the different circumstances under which it may have occurred.

The account of the diseases of the organs of circulation is, as we have already remarked, by Dr. Joy.

An accurate and comprehensive digest of the present state of our pathological and therapeutical knowledge in relation to the more important lesions of the heart and blood vessels, has been long a desideratum, which the present work will in a great measure supply. For although the summary before us is more concise than was perhaps desirable, it nevertheless comprises a very good view of the leading facts connected with the subject.

The introductory chapter which treats of the anatomy of the heart; the relations to it of the lungs; its weight and measurement, its natural and disordered motions, normal and abnormal sounds, and the arterial and venous pulse; of the diseased states of the heart generally; of their diagnosis, by local or physical, as well as by general symptoms; of their causes and prognosis, with a general view of their treatment, is particularly interesting and instructive, and facilitates greatly the correct appreciation of the nature, character, phenomena, prevention and cure of the special diseases of the organs of the circulation.

As nervous affections of the heart, Dr. Joy enumerates palpitation, syncope, angina pectoris and cardiac neuralgia; a very fair exposition of the pathology, diagnosis, and treatment of which, he presents in the four succeeding chapters.

In regard to palpitation of heart, the following remarks demand especial attention, and show the vast importance of every practitioner making himself fully acquainted with the physical signs of the organic changes of the heart.

"How much unwarrantable suffering is inflicted on individuals and families by the deplorable, but unfortunately too frequent error of confounding nervous affections of the heart with those of an organic nature, is but too well known to need to be more than simply mentioned here. It is only, however, of late years, or since more accurate grounds for forming a diagnosis of these two very opposite classes of disease have been furnished, by the discovery and judicious application of the physical signs distinctive of each, that the better informed portion of the profession has become fully aware of the extent to which such error must have formerly existed. We do not, however, pretend to say that even yet every individual case can be satisfactorily referred to its true head, though certainly a very encouraging advance towards so desirable an object has been, within our own memory, effected. When the supposed nervous palpitations are of very frequent recurrence, or continue for a very considerable period, we may still sometimes find it far from easy to make up our mind decidedly as to their real origin; and where they exist, as is often the case, in complication with structural diseases of the heart, to recognize their nature and their precise share in the existing disorder of the functions of the organ, is often a matter of extreme difficulty. Bouillaud has given a very striking example of this puzzling complication, in the case of a young, nervous, hysterical female, labouring under amenorrhœa, in whom violent palpitations recurred on the slightest causes. Even feeling her pulse, at the hospital visit, would send the blood at once into her face, and induce vehement action of the heart, with attacks of a spasmodic character, which often passed into a hysteric paroxysm. And yet with all this fallacious nervous susceptibility, by which many a careless observer might have been led to neglect all further examination of the case, there existed enormous hypertrophy of the heart, with induration of the valves of the left side, during [deriving?] their origin from an attack of articular rheumatism."

Angina pectoris, Dr. Joy is inclined to believe, may exist, at least in its less inveterate modifications, altogether independent of structural changes. It is only, he remarks, in the more aggravated and prolonged cases, that such alterations have been very conspicuous. When they occur, their most frequent seat is undoubtedly in the heart, pericardium, or great vessels. Dr. J. would appear to adopt as correct, the views of Laennec, that angina pectoris is essentially a nervous disorder, affecting primarily either the cardiac or the pneumogastric nerves or both, according as the heart or the lungs and stomach are affected, or all three simultaneously; the brachial plexus becoming secondarily affected, as likewise the superficial cervical plexus supplying the front of the thorax, and sometimes, but much more rarely, those of the lumbar and sacral plexus, giving rise to pain in the lower extremities, and occasionally to pain and swelling of the testicles.

A very interesting summary is presented of the various facts known in relation to this disease, and of the opinions expressed in respect to its pathology by the several writers of eminence who have treated upon it, as well as a brief notice of the plans of treatment that have been proposed for its prevention and cure.

Under the head of neuralgia of the heart is considered an acutely painful affection of that organ, obviously of a nervous character, that has been described by Dr. Elliottson, and other recent writers, and which seems to differ from angina, more in respect to the small number of parts which are drawn into morbid consent with the suffering cardiac nerves, than in regard to either its nature or appropriate treatment.

The exposition presented by Dr. Joy of the several inflammatory affections of the heart, is very complete, embracing a concise but explicit notice of every well authenticated fact calculated to throw light upon their nature, symptoms, physical signs, complications, causes and treatment. Much praise is due to that gentleman for the able manner in which this portion of the work is executed.

The account of hypertrophy and dilatation of the heart, are equally full and satisfactory. The physical signs, especially, are very clearly pointed out.

The remaining affections of the heart, atrophy, changes in the consistency and colour of the organ, morbid effusions into its substance, new formations, rupture of its different cavities and of its valves, wounds, polypous concretions within its cavities, dropsy of the pericardium, displacement, hernia and malformations of the heart, are described with more or less brevity; but, at the same time, in a manner calculated to present a useful and instructive view of these comparatively rare affections; the diagnosis of which is often attended with no little difficulty, causing their true nature often to be entirely overlooked.

The notes and additions to the present volume, by the American editor, are judicious and valuable, and render it in many particulars better adapted to convey to the class of readers to whom it is addressed, correct and intelligible views of the character, diagnosis and treatment of the class of diseases which it embraces.

We recommend the entire work to our readers, as one calculated to afford to all of them much valuable information in relation to each of the several affections of the organs of respiration and circulation. To the younger members of our profession, especially, it will form an almost indispensable table book. D. F. C.

ART. XII.—*First Lines of Physiology; designed for the use of Students of Medicine.* By DANIEL OLIVER, M. D., LL. D., A. A. S., &c. 8vo., pp. 514.—Philadelphia: 1840. [Second Edition.]

WE were among the first who had the pleasure of recommending the former edition of Dr. Oliver's First Lines to the favourable notice of the medical public, as an admirable compendium of the elements of physiology, particularly for the use of the medical student; and we feel gratified that the author has been enabled, by the preparation of a second edition to still further increase the value of the work, by copious additions;—supplying, thus, some of the deficiencies of the first edition, and including the several improvements which the science of physiology has received since its publication.

No alteration has been made in the plan and general arrangement of these outlines, and we agree with Dr. Oliver that few, if any could be found preferable, on the whole, to that which he has adopted.

The preliminary matter, constituting nearly one-fifth of the entire volume, comprising a description of the distinctive character and of the elementary analysis of the organization—anatomical, chemical, and physiological—form a very important and valuable part of the outlines, being fundamental to the whole subject of physiology.

Nearly every portion of the work has received more or less copious additions; especially those which treat of the Blood, Innervation, the Circulation, Digestion, Nutrition, Animal heat, the Senses, particularly Touch, Taste, and

Vision, Sleep and Generation; entire new sections being added, on the physiological functions of the brain, and on the development and physiology of the fœtus.

We regret that Dr. Oliver has omitted in this as in the former edition, any notice of the doctrines of phrenology—while he still retains the chapter on animal magnetism, in which credence is indirectly given to many of the absurdities which imposture has attempted to foist upon the credulity of the public as the direct effects of a peculiar magnetic influence, the very existence of which still remains to be proved.

That the numerous well established facts that have been recorded in relation to the curious and interesting phenomena induced in persons of an extremely susceptible or nervous temperament, by what has been absurdly styled animal magnetism, demand the attention of the physiologist we admit; they are a part of the vital phenomena exhibited by the animal organism under certain circumstances—the careful investigation and cautious analysis of which may in all probability lead to important discoveries in relation to the functions and mode of action of the nervous system.

Dr. Oliver after presenting in the preface to the present edition the reasons that led him to retain the entire chapter on animal magnetism, remarks that he is no advocate for the pretensions of animal magnetism, but that he has so much respect for many of those who are or have been, that he wishes it rescued from the hungry clutches of mountebanks, and impostors, and placed under the protection of science, until its claims shall have received a thorough investigation. He appears, however, to have forgotten that the very reasons offered by him for the consideration of the subject of animal magnetism in an elementary system of physiology, may be urged with still greater propriety in favour of a consideration also, of the doctrines of phrenology—which, to say the least, are of equal importance and supported, certainly, by as large a mass of well established facts, while they have received the sanction of men, equal in numbers, as well as in intelligence, cautiousness and candour, with those who after an examination of the subject, declare themselves to be satisfied with the evidence in favour of the claims of animal magnetism. D. F. C.

Art. XIII.—*Knight's Miscellanies. English Causes Célèbres; or, Reports of Remarkable Trials.* Edited and illustrated by George L. Craik. Vol. I. London, 1840.

No student in legal medicine can long be unacquainted with the contents of that extraordinary collection of French law cases, which is usually denominated the "*Causes Celèbres.*" The remarkable narratives contained in these volumes interest equally the old and the young. "They are indeed a history of passion and adventure, often as exciting as any fiction, with all the impressiveness and substantial value of truth." But they acquire a higher importance, when, as is frequently the case, their discussion involves questions of medical science.

A work in imitation of the above has recently issued from the English press. The first volume contains the trial of Count Koningsmark, and others, for the murder of Mr. Thynne, 1682; of Col. Turner, and others, for felony and burglary, 1664; of the Rev. Robert Hawkins, for felony, 1669; of the Earl of Pembroke, for the murder of Mr. Cony, 1678; the great Huntingdonshire case of Day *versus* Day, 1797; the case of the Perrys, executed for murder, 1661; the trial of Arthur Norkott, and others, for the murder of his wife, 1628; and the trial of Philip Standsfield, for the murder of his father, 1688.

Several of these cases are to be found in the English State Trials, and the two last (Norkott and Standsfield) are noticed in almost every systematic work on medical jurisprudence. In each, the proof of murder was supposed to be strengthened by the bleeding of the corpse from the touch of the murderer. Mr. Thynne received numerous fatal wounds from the discharge of a blunderbuss, and he survived but a few hours; so that in his case, no medical point could be contested. Again, on the trial of Lord Pembroke, it was proved that he had severely injured his victim in a drunken brawl, and the Peers, by whom he was tried, manifested their sense of his guilt, by finding him guilty of manslaughter. The Perrys were found guilty of murder under strong circumstantial evidence, but *without finding the body*. They were accordingly executed, protesting their innocence—and yet, some years afterwards, the individual supposed to have been murdered, returned to his dwelling and declared that he had been seized and carried to foreign parts, from which he had just escaped!

Of the remaining three cases, there is only one that belongs to our present subject. I refer to that of Day *v.* Day.

Thomas Day, of the county of Huntingdon, died in 1775, leaving two sons, Thomas and John. He devised his property, which was valuable, to the oldest for life, with remainder to the heirs of said son, and in default of such issue, to his younger son in fee. Under this will, Thomas succeeded to the estates. He married one of his servants, Mary Lakin, the daughter of a carpenter, who, after having borne him a daughter which died, professed herself, in the latter end of the year 1774, to be again pregnant. She went to her native place in Staffordshire, under pretence of being delivered there, where she might have the attendance of her mother, and returned in March, 1775, with a child which she called her own, and which her husband received as his son, and a short time before his death acknowledged as such in his will. Not long after, a separation took place between the husband and wife, and they continued apart until October, 1783, when the former died. The minor, by his trustees, entered into possession of the estates of his father.

It appears that some time previous to the death of Thomas Day, he received an unsatisfactory account respecting the birth of the child, and an attorney at his request, called on Mrs. Day concerning the same. She stated that the *child was not hers*. On a subsequent occasion, she swore before a Master of Chancery, that she had lain in of a child, which died, and that she had prevailed on a relation to give up her child, and that it was this child which she had taken to her husband. Mr. Day, on being made acquainted with these circumstances, signed the deed of separation, but declared, that although the child was not his, yet as he was fond of it, he would take care of it.

Information of these and other corroborating facts having reached Mr. John Day, he instituted a trial by ejectment for the recovery of the estate. It came on at the assizes, in 1784, before Lord Loughborough, Chief Justice of the Court of Common Pleas, and a special jury.

For the plaintiff, it was proved on the testimony of several witnesses, male and female, that Mrs. Day, at the time of leaving home, had not the appearance of being pregnant; that she had not that appearance during any part of the three months which she spent at her father's house, in Leigh; and that she did not lie in there. It was positively sworn by a female domestic in the house of her father, that when Mrs. Day and her mother set out for Huntingdonshire, at the end of three months, they had no child with them. Another female stated that she had frequently slept with Mrs. Day while she was at Leigh, and washed her linen, and she did not appear to be with child. It further appeared in testimony, that Mrs. Day took away the infant of her sister-in-law, and retained it several days; nor did she return it until compelled by a magistrate. This was in February, 1775.

The parties (Mrs. Day and her mother) were traced to Litchfield, at which place they had no child with them. At Atherstone, however, they arrived on foot and went to the house of an aunt. Mrs. Day had a child with her, and said "I have brought you my child." The aunt replied that she did know that she had one, to which Mrs. Day answered, "Oh yes, I have been to my mother's to lie in, and the child is five weeks old." They remained some days, and then proceeded homewards. Two females intimate or resident in the house testified that Mrs. Day did not suckle the child, and that she stated that she had no milk. The suspicions of the husband as to its paternity were also fully proved.

This was the evidence for the plaintiff. On the part of the defence, after producing the will of Thomas Day, in which he described the defendant as his son and left him all the property, female witnesses were produced to prove that Mrs. Day appeared big with child, when she left home—some of them swore that they had seen her suckle the child while others had never witnessed it.

Elizabeth Rutter deposed that Mrs. Day was delivered of a child at Broseley in Shropshire, during the month of January, and that she and a midwife were the only persons present at the birth—that Mrs. Day remained with her a month and then returned home. This testimony was confirmed by Mrs. Cornes, the step-mother of Rutter. Mrs. Day, the mother, was next examined and her testimony agreed with that of the two last witnesses. She had left her father's house on account of a quarrel—and had arranged to be confined at the house of Rutter. She explained away the fact of not having the child with her at Litchfield, by saying that she had left it at a place near while she went on a visit to her mother's. She also acknowledged that she had sworn that the child was not hers, but it was for the purpose of getting it back from Mr. Day.

Several witnesses swore to the great resemblance of the child to Mr. Day.

Lord Loughborough in summing up, remarked that the evidence of the plaintiff was circumstantial only, and not positive, and it was necessary, in a case of this description, to make out the fact by the clearest evidence. On the other hand, the child had been brought up as the son of Mr. Day, and his will had fully confirmed this belief. Nothwithstanding the improbable accounts of the mother and her witnesses, he advised a verdict for the defendant, which was accordingly found.

In a few months after the trial, Mrs. Rutter and her mother came to Mr. Herwood, the steward of the Marquis of Stafford at Trentham Hall, near which they resided, and told him that what they had sworn on the trial was false, that they had never been happy since, and were now desirous of confessing the truth. On being carried before a magistrate they repeated this statement and deposed that Mrs. Day had promised them money (which she had not paid) if they would tell the story of her being brought to bed at Broseley. The father of Mrs. Rutter also swore that Mrs. Day had urged him to accompany his wife and daughter to the assizes and confirm their testimony, which he had refused to do knowing it to be false. Important information was further procured as to the females who had obtained the child for Mrs. Day, and also as to its actual mother.

Mr. John Day however was so much injured in his property, by the expenses of this suit, that he was unable to commence another. He died in 1795. His son, being in a situation to incur the risk of a new trial, instituted it, and the case was again brought to issue in 1797. Mr. Erskine was the leading counsel for him, while on the other side, were Messrs. Le Blanc and Garrow, afterwards judges. The defendant was now a man grown, of excellent character and highly popular; so much so that Mr. Day in a subsequent publication asserts that "the town of Huntingdon, during the trial, more resembled the scene of a contested election than an assize town during the solemn administration of justice, and such was the state of confusion in the town, at the time of the trial, that I was obliged to apply to the Mayor to order out his constables to keep the peace, and to enable me to bring my witnesses into court."

In analysing this second trial, I will only notice such additional circumstances as were developed concerning the supposed pregnancy and delivery of Mrs. Day.

It was proved by a respectable witness that Mrs. Day was present at a christening on the 14th of December 1774—that she staid all night, was in good health and spirits and had no appearance of being pregnant—and yet she must have been (if her account was correct) at least seven months or more advanced at this time. It was further proved that she had been present and stood Godmother at the baptism of Edward, son of William Riddle on the 22d of January 1775. Ann Harris swore that she met a female at the Stafford market in February 1775, who wished her to go in quest of a child—that she accompanied the female to the house of Sarah Hollander, who had recently lain in—and that Mrs.

Day had offered money to Sarah, if she would sell her child. This was refused by Sarah, and it may be here added, that Sarah Hollander was subsequently called as a witness and confirmed the correctness of this deposition. Mrs. Harris further stated that another child was obtained at Wolverhampton, and retained by Mrs. Day, until the mother accompanied by a constable, reclaimed it. This evidence also was confirmed by the mother Mary Rone and the constable.

Among the witnesses last called for the plaintiff, was Ann Stokes or Osborne, alleged to be the real mother of the defendant. She deposed that she had an illegitimate child born to Charles Dutten—in the Birmingham Workhouse; that when the child was about thirteen or fourteen weeks old John Harris made an application to her on behalf of a lady (whom she afterwards identified as Mrs. Day) for the child—promising to have it well brought up and that it would have property. She consented and gave up the child. She never heard of it again until about eleven years thereafter. She was informed by Mr. Horwood, that Mrs. Day resided at Trentham—and accordingly repaired there, but was not allowed to see her. About three years afterwards, she was more successful. She saw Mrs. Day, who owned that she had the child from the witness; that it had been well taken care of, and was now alive and well. Mrs. Day further mentioned that there had been a trial about the child.

Mr. Garrow in his cross-examination endeavoured to draw from the witness an admission that her life had subsequently been a dissolute one—in so far as related to the practice of adultery, (for she had subsequently married.) When hard pressed, she did not deny this, but would not give a direct answer—and said she did not come to swear that. The fact of her interview with Mrs. Day, and the conversation between them, was confirmed by Elizabeth Lakin, Mrs. Day's sister, who was with Mrs. Day at Trentham.

These were the most important facts in behalf of the plaintiff. For the defendant, it was urged by his counsel, that several witnesses were now brought forward, who spoke of circumstances and conversations which they had never mentioned on the trial in 1784. The inference hinted at, was of course that they might now be bribed.

Mary Harding, then in the service of Mrs. Day and at that time about fourteen years old, remembered the departure and return of Mrs. Day. She was very large when she left—had all the appearances of pregnancy—and on her return, the witness swore positively, that she suckled the child for a quarter of a year. The witness acted at times as a nurse, and was therefore positive on this subject. When the child was removed by Mr. Day, the mother manifested much grief and distraction of mind. The testimony of Mary Reed, another house servant, was to the same effect. "She had seen Mrs. Day suckling the child many times and had seen the milk drop from her breast." Mr. Peck, a surgeon and accoucheur in the vicinity, who had attended Mrs. Day in her first labour, deposed that this had been a painful one and that Mrs. Day had assigned this, among other things, as a reason for going to her mother's—that the subsequent pregnancy was a frequent subject of conversation between him and Mr. and Mrs. Day, and that he had remarked to the former, that "he had lost a job by Mrs. Day going into the country to lie in." Mr. Peck also saw Mrs. Day, about two weeks after her return—and saw the child attempt to suck, "but I did not see the milk; I am not certain of that." Another female however swore positively, that Mrs. Day had suckled the child in her presence, and when it was removed from the breast, she saw the milk drop.

Several witnesses both male and female, deposed to the striking resemblance between the defendant and the late Mr. Day.

The Jury after a charge from the judge, rather leaning towards the defendant, brought in a verdict for the second time in his favor.

It is added by the Editors, that the defendant declined receiving the costs of the trial, amounting to £480, although they were tendered to him, accompanied with an assurance, that as soon as he should have got the money, another action of ejectment would be brought. He also refrained from claiming one hundred acres of land in the possession of John Day, although his right to them was clearly as good as to the other property. Finally, he proposed a compromise, by giving up this very property, which, after much solicitation by his friends, Mr. John Day reluctantly assented to—and thus a bar was placed to all further litigation.

It is also stated, that some time subsequently, the defendant was visited at his house by his reputed mother Mrs. Osborne.

Was or was not, this a case of *Pretended Pregnancy and Delivery?* I incline to believe that it was. The only circumstances (medical) that seem to militate against this opinion, are the presence of milk in the breasts and the remarkable resemblance between the supposed father and son. Yet both these might actually exist, without necessarily involving the result decided upon by the jury. We now know that even unmarried females have suckled children—and is it not possible, that by constant irritation, milk may have been produced in the breasts of this female, who had previously borne a living child? As to the resemblance, while we readily allow, that this was an extraordinary fact, we must also confess that it has often occurred in individuals born thousands of miles from each other.

T. R. B.

ART. XIV.—*Report of* THOMAS LAWSON, M.D., *Surgeon General of the United States Army*, communicated by the President to the two houses of congress, at the commencement of the second session of the twenty-sixth congress. Washington: 1840.

THIS, like the preceding reports from the same able officer, contains some very interesting information.

The whole number of cases under treatment during the year ending September 30, 1840, was 29,076, of which 28,167 were within the year, and 909 were remaining from the previous one. Of the whole number reported sick 27,514 have been restored to duty, 215 have been discharged the service, 33 have deserted, and 254 have died; leaving 1,060 on the sick report September 30, 1840.

The mean strength of the army for the last year is estimated at 10,116, and the number reported sick during the period just named being 29,076, and the aggregate of deaths 254, the proportion of cases of indisposition to the number of men in service was as 1 to 2.8 or 280 per cent.: the ratio of deaths to the number of men 1 to 39⅞ or 2½ per cent., and the proportion of deaths to the number of cases treated, as 1 to 114½, or a fraction less than 1 per cent.

"Upon comparing the sick reports from the different sections of country, we find," the surgeon general remarks, "that the greatest number of cases of indisposition, and the greatest amount of mortality have, as heretofore, occurred among the troops serving at the southwestern posts; while the least amount of sickness, and the fewest number of deaths, comparatively, have occurred at the military posts of the northwestern section of our country.

"Of the posts occupied by troops during the last year, forts Gibson and Wayne, on the southwestern, forts Crawford and Detroit on the northwestern, and Poinsett barracks and Madison barracks on the northern frontier, were the most unhealthy in their respective sections of country.

"Hancock barracks, in Maine, (the only eastern post occupied by a large body of troops,) is always healthy. And the army in Florida has, during the last year, comparatively speaking, suffered less from disease, and lost fewer men by natural causes, than the troops on the southwestern stations, or those located at Detroit, Poinsett barracks and Madison barracks.

"The unusual amount of sickness and of mortality at Madison barracks, Poinsett barracks and at Detroit, may be attributed, in a measure, to the location of the troops within, or in the immediate vicinage of Sackett's Harbour, Buffalo and Detroit. Troops are always more sickly, and their diseases generally more malignant when brought into temptation, and placed within the reach of the dissipation of a town.

"Of all the military posts, however, which have been occupied by troops for several years past, forts Gibson and Wayne, in the state of Arkansas, are decidedly the most sickly.

"Fort Gibson, in particular, is an exceedingly unhealthy position; it has not only given a greater number of deaths, but, I believe, has invalided more men, for the last ten years, than any other military station in the United States. This post is situated in the immediate vicinity, and on the northeast side of the rivers Arkansas, Verdigris and Neosho; and as the prevailing winds during the summer season come from the south and southwest, it is to leeward, and consequently on the wrong side of those rivers; and an immense tract of low land, intersected with lakes, lagoons, &c., near the confluence of the streams."

There were 41 applicants for appointment to the medical staff of the army during the year, of whom 20 declined or failed to present themselves for examination, 1 was over the age prescribed by the regulations, and 20 were examined, of whom 10 were approved.

ART. XV. *Outlines of Anatomy and Physiology.* Translated from the French of H. MILNE EDWARDS, Doctor of Medicine, Professor, &c., &c. By J. F. W. LANE, M. D. Boston: C. J. Little & J. Brown, 1841; pp. 312, 8vo.

THE reputation of M. Edwards would of itself be sufficient to ensure the present work a welcome, even though not one aiming at the depth and originality of scientific research by which that distinguished author acquired his fame. The American translation is well executed, and is very handsomely got up as to typography and cloth binding. The wood-cuts with which, in compliance with the taste now so prevalent, it is decorated, appear to us well executed and distinct. We are also pleased to observe that the publisher is one of those who have resumed the ancient and useful practice of inserting marginal, indented notes, recapitulating the matter of the text. These are among the mechanical means which greatly facilitate study and reference.

The work before us appears well adapted to the purposes of the scientific or literary man who wishes to acquaint himself with the elements of modern physiology. It is not apparently intended for the popular market; no effort being made at the tone of familiarity which seems necessary to encourage readers not in the habit of analogous studies. It is, however, quite sufficiently clear for the purposes for which we have just recommended it. The style of Professor Edwards is of that lucid kind which, as Buffon remarks, is the growth of a clear habit of thinking, and is the true evidence of a sound, philosophical intellect, if not of genius. It cannot, of course, be devoid of that foreign air which arises from the fact of its having been written for a public of a different kind from ours. We must give Dr. Lane the credit of having made, though with an inaccuracy or singularity here and there, a very good version, much above very numerous specimens we have presented to us. It is scarcely possible that a fine writer should not suffer in a translation, even where the translator is himself an equally fine writer. Idioms incapable of being rendered in another language, the latter is not allowed to replace by new beauties of his own; because the product would by so much become his own work instead of that of the first author. The utmost praise, therefore, at which a translator can aim seems to be faithfulness, clearness, and an appropriate style. In this, in general, we think the present volume successful. Novelty is, of course, out of the question. As the work is itself an abstract, it needs not that we should prepare one.

B. H. C.

Art. XVI. *Medical Etiquette; or, an Essay upon the Laws and Regulations which ought to govern the conduct of Members of the Medical Profession in their relation to each other. Compiled exclusively for the Profession.* By Abraham Banks, Esq., M. R. C. I., &c., &c., &c. London: 1839; 12mo. pp. 104.

This essay embraces the consideration not only of medical etiquette in its restricted and ordinary signification, but the more important points of medical ethics and also various subjects appertaining strictly to medical politics. The code of morals advocated by Mr. Banks is high toned and just; and a rigid adherence to them would elevate the profession to its correct position. With regard to the soundness of the author's views in relation to *some* points of medical politics we are not so well able to judge as the doctrines he inculcates have reference to the state of the profession in England, which is so different from what it is in this country, that what may be expedient there may be the reverse here. There is one subject to which the author devotes a chapter, that on the mode of Payment of Medical Men, in which he insists on the expediency of remunerating all medical practitioners by *fees paid at the time,* which would be well worth considering had we the space for the purpose.

While we can unhesitatingly commend the moral precepts of our author, we regret that we cannot do the same for the language in which they are conveyed. There are some passages in his work so grandiloquent and inflated as fairly to compete with the loftiest flights of western stump oratory. We trust this will be attended to in another edition.

Art. XVII. *Rambles in Europe in* 1839, *with Sketches of Prominent Surgeons, Physicians, Medical Schools, Hospitals, Literary Personages, Scenery, &c.* By William Gibson, M. D., Professor of Surgery in the University of Pennsylvania, Senior Surgeon to the Philadelphia Hospital, &c., &c. Philadelphia: Lea & Blanchard, 1841; 12mo. pp. 309.

The desire to know something of the character, personal appearance, manners, &c., of great men, with whose works we are familiar, is strong and almost universally felt; and we venture, therefore, little in predicting that the volume before us will be eagerly sought after and generally read. Its merits will, moreover, secure for it still higher success. The sketches it contains are graphic, spirited, often piquant, and apparently accurate. Whatever opinion may be held as to its being strictly proper to delineate living characters, or whether being so shown up may be agreeable to them, it must at all events be allowed that such exhibitions are generally gratifying to the spectators. But the reader of this volume will not only find amusement in it, he will also receive instruction, and will obtain a clearer insight into the characteristic traits of prominent professional men, than he could acquire even in a long residence among them.

Art. XVIII. *A Visit to Thirteen Asylums for the Insane in Europe; to which is added, a Brief Notice of Similar Institutions in Transatlantic Countries and the United States, and an Essay on the Causes, Duration, Termination, and Moral Treatment of Insanity, with Copious Statistics.* By Pliny Earl, M. D., Resident Physician of the Friends' Asylum for Insane, Frankford, near Philada., &c., &c., &c. Philadelphia: 1841; pp. 144, 8vo.

The first part of this volume consists of an article which appeared in the Number of this Journal for November, 1839, and which excited considerable attention, and has been extensively quoted. To this Dr. Earle has added brief notices of the Insane Asylums in England, Scotland, Ireland, Holland, Belgium, France, Italy, Egypt, and the East Indies, which he did not visit; and also accounts of the Asylums for the Insane in the United States. The volume concludes with an essay on the causes, duration, termination, and moral treatment of Insanity, which is enriched with some very interesting statistical statements.

This volume commends itself to the attention of every one who is interested in the subject of Insanity, by the large amount of valuable information it embodies, as well as by the confidence which may be reposed in the views of the author from the great attention which he has paid to his subject.

Art. XIX. *A Memoir of the Life and Character of the late Joseph Parrish, M. D.* Read before the Medical Society of Philadelphia, October 23, 1840. By George B. Wood, M. D. Philadelphia: 1840; pp. 72, 8vo.

Few men have enjoyed a more enviable reputation in the community in which they lived, than did the late Dr. Parrish. Ardently devoted to his profession, industrious, benevolent, conscientious, and endowed with great moral courage, he had in an unusual degree the faculty of acquiring the unbounded confidence of his patients, of attracting to himself many and devoted friends, and of conciliating every one with whom he came in contact, so that it may be truly said that he had no enemies. Not only was his success throughout life unusual, but he has had the still rarer good fortune to find a biographer who could appreciate his character, and the talents to correctly delineate it. The extent of this good fortune will be appreciated if it be admitted, as we believe it must, to be a just observation, that "a well written life is almost as rare as a well spent one; and there are certainly many more men whose history deserves to be recorded, than persons willing and able to furnish the record."

Art. XX. *Annual Report of the Board of Trustees of the Massachusetts General Hospital for the year* 1840. Boston: 1841; pp. 44, 8vo.

This report comprises some interesting documents.

The number of patients received during the year 1840 into the Hospital in Allen street, as reported by the superintendant, was 362, of whom 144 were cured, 96 were much relieved, 41 were relieved; 43 were not relieved, many of them having been almost beyond the hope of recovery before they entered the hospital; and 22 died.

In the very able report of Dr. Bell, the Physician and Superintendant of the McLean Asylum, we are furnished with the following statistics of that institution for five years:

Year.	No. admitted.	No. discharged.	Whole No. under care.	Died.	Not improved.	Improved.	Much improved.	Recovered.	Remaining.
1835	83	84	163	11	7	11	9	45	77
1836	106	112	183	10	24	5	9	64	71
1837	120	105	191	8	8	4	10	72	86
1838	138	131	224	12	13	7	23	74	93
1839	132	117	225	10	13	11	11	69	108
1840	155	138	263	13	18	20	12	75	125

"The ratio of recoveries and of deaths in those discharged, and of deaths in the whole number of those under the care of the Asylum, as continued from the table published in the last Annual Report, is as follows:

Year.	Per cent of recoveries.	Per cent of deaths of discharged.	Per cent of deaths of all under care.
1835	53.5	13.	6.1
1836	57.1	8.9	5.5
1837	68.6	7.6	4.2
1838	56.4	9.1	5.4
1839	59.	8.5	4.4
1840	54.3	9.4	5.

"From these statistics it appears, that during the four years of the direction of its present Superintendant, the proportion of recoveries of all cases old and recent, without allowance for those proving "unfit" or not proper subjects, or those who have died under care, or those who have been prematurely removed before the event was known, has been about sixty in the hundred, and the proportion of deaths between four and five in the hundred."

The following remarks of Dr. Bell are well worthy of attention. "During the last years" he says, "I have not attempted to draw the line of demarcation between *recent* and *old* cases, as experience has satisfied me that any attempt to decide upon the duration of time before admission, that the patient has been afflicted, is exceedingly fallacious, giving a mere approximation to the fact. It is liable to the same objection which obtains in essaying to specify the causes of disease, that of giving an apparently mathematical and certain aspect to facts, so involved in doubt, so complicated and vacillating, that they really have nothing like fixedness or certainty.

"The records of this Asylum justify the declaration that *all cases certainly recent*, that is, whose origin does not either directly or obscurely run back more than a year, recover under a fair trial. This is the general law; the occasional instances to the contrary are the exception.

"During some years, as in 1838 for illustration, we have had so entirely the co-operation of friends in a due perseverance that we should have been able to report the recovery of 100 per cent. of cases presumed to be recent. Again, in another year, the premature withdrawal of half a dozen cases before we regarded them as recovered, although their friends might so consider them, would present an entire different view of the curability of insanity in two different years, as far as figures express the fact, although the actual results might be identical. So the general expression of the fact that sixty per cent. of all cases have recovered during the last four years, is of no importance as a means of drawing any conclusions, except as to the different periods of the same institution. In this Commonwealth, where the value of hospitals for the insane has been established for over twenty years, and the community is so generally advised of the infinite importance of early subjection to treatment, the results of institutions must be far more favourable than in communities where all this acquaintance and public confidence has yet to be acquired. This is strongly illustrated in contrasting the first and last five years of this Asylum, showing a difference of over a hundred per cent., which is undoubtedly ascribable mostly to this fact of more recent admissions, and some changes in the regulations in regard to hasty removals.

"There is, I am satisfied, no institution in the world, which upon the whole receives its cases with less delay after disease has proved intractable at home, than this. Its *private* character however, subjects it necessarily to some drawbacks upon its ratio of recoveries. Patients are only retained so long as friends elect;—there is no statutory provision compelling the institution to receive, or preventing the removal of any patient at any time. Hence infirmity of purpose, want of persevering faith, or still more frequently want of pecuniary means, often occasion differences of results in our annual summing up, by the removal of recoverable cases, to an extent which proves the absurdity of the statistics, except as a means of comparison at different epochs of the same establishment.

"Again, in the mortality and restorative results of various institutions, how great a differense should be looked for from difference of regulations as to admissions—in an institution for example, receiving only cases of violent excitement and high action, and in one where no restriction as to the patient's condition exists, where the exhausted, the aged, the epileptic and the hopeless are brought merely to relieve friends, or in the desperate hope that some new appliances may renovate the exhausted system.

"I have been induced to suggest these hints upon the fallaciousness of the ordinary statistics published, when regarded irrespective of the varying and modifying circumstances, which, in this country at least, prevent any just comparison from being made in the mere abstract results of figures, not from any apprehension that our Asylum may not appear as well on paper as any other, for the influence of its happy position in a community where the insane, who belong to the classes from which its inmates are derived, as a general rule are received speedily after a decided outbreak of excitement, always has afforded a larger proportion of curable subjects than I have noticed in any other. But during the past year the attempt has been made (with the best intentions I doubt not,) to aggregate the mere figured statistics of the various American hospitals for the insane, and deduce conclusions from them, without reference to their difference of position or of regulations as to receiving, rejecting, or dismissing patients. In such statistics injury must be done to some whose apparent results may not be so honourable as the real, of which only those who are informed of all the particulars of difference, a small portion of the public of course, can discriminate and arrive at an accurate judgment. A single illustration will perhaps place the absurdity of the common expressed statistics of insane hospitals in a stronger light. A new institution in a state where the patients are committed by the order of a judge of some court, is capable of receiving a hundred patients. During its first or second year, or until its accommodations are filled, it might be that its only patients discharged would be the recovered, if its managers or directors should so decide, for in the supposed case the friends have no voice in the decision. Of course its recoveries of all cases, old and recent, would be 100 per cent. And subsequently its per centages would depend exactly upon the number of harmless or incurable or inconvenient subjects which its directors should judge it expedient to dismiss!

"A few years since it became necessary in order to accommodate the urgent claims of recent cases, for the Trustees to cast their view over the entire class of old cases, many of whom had been in this Asylum from its opening, to ascertain how many and which could be dismissed with least injury to themselves or to the comfort of their friends. So many were dismissed under this resolution "not improved," as to make in that year fifteen or twenty per cent. difference in the apparent results!

"As far as this Asylum is concerned in the apparent bearings of statistical returns, the favourable circumstances in which it stands as before alluded to, prevent any danger of its suffering from comparison of figures;—for in the view of these it is believed that no published returns present more decided favourable results, but feeling unwilling to reap honours not fully deserved, it has been felt due to the sanctity of scientific truth and to justice as regards the new institutions springing up every where around, that the community should be set right on this subject."

SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Lymphatics of the Brain.*—Dr. F. Arnold, in his researches on the structure of the brain and spinal cord, and in his Icones Anatomicæ, has published the first complete description of the absorbents of the brain. In the dura mater, veins only were for the most part filled by the injection, and he obtained very successful mercurial injections of the absorbents of the pia mater. He distinguishes three different networks: 1. A superficial delicate one, whose vessels are one-sixth of a line in diameter, and whose meshes are extraordinarily minute, lying in the cellular tissue which connects the arachnoid with the pia mater; 2. A deeper and coarser network also in the subserous tissue of the arachnoid, and composed of vessels with a diameter of one-fourth of a line; 3. A still coarser network, with vessels one-half of a line in diameter, and with such narrow interspaces, that when they are filled the brain seems completely covered by the injection. This network, however, is contained in the pia mater, and passes with its plexus into the depths of the furrows between the convolutions. The trunks of the absorbents into which these networks are continued take the course of the veins on the surface of the brain, accompany them closely, and pass with them and with the arteries through the foramina in the skull. In the choroid plexuses of the lateral and third ventricles there are lymphatic networks and small trunks, which collect into one considerable trunk, accompanying the vena magna Galeni. The absorbents of the very substance of the brain, which probably go with its small veins, could not be filled; they always gave way just on the walls of the ventricles. At present also the attempts to inject the absorbents of the spinal cord have had no success.—*London Med. Gaz.*, November, 1840.

2. *Absence of the Uterus.*—Dr. Seguin relates, in the *Revue Médicale*, (July, 1840,) an example of this malformation. The subject of it was a woman, aged 27 years, of excellent constitution, and enjoying perfect health. The mammæ were well developed, and the external parts of generation perfectly formed, but the vagina was a cul-de-sac, of about an inch and a half in extent, it was lined with a rose coloured rugose membrane. Curious to discover whether there existed behind the membranous closure a uterus or rudiment of one, Dr. S. introduced a finger into the rectum and another into the imperfect vagina and ascertained that the two fingers came in almost perfect contact. No trace of an uterus could be detected.

This woman is married, has venereal desires, and every month experiences a species of *molimen hæmorrhagicum*, though she has never had any hæmorrhage to replace the menstrual discharge.

Notices of some similar cases will be found in our Numbers for May, 1840, pages 39 and 185, January, 1841, page 270, and in the present Number, page 348.

3. *Arrest of Development of the Uterine Organs.*—Dr. O'Bryen records, in a recent No. of the *Dublin Journal,* (January, 1841,) an example of this, in which the uterus measured only one inch in length, one line and a half in thickness, and four lines in breadth, which latter was the same at the os tincæ and the fundus. The ovaries were each about the size of an almond, and, when divided, presented two or three cavities. The Fallopian tubes were well formed, but their openings into the uterus were much larger than usual; the os tincæ was about the size of a small pea, and very soft; the vagina was small, and had a very few rugæ.

4. *Menstruation during Gestation, and Amenorrhœa in the intervals.*—Dr. Meurer has recorded an example of this in a woman ætat. 27, pregnant, when he wrote, for the fourth time. She always has had her menses regularly during pregnancy, and only during that time. They come on without any illness; and she has always borne healthy children at the full period. While unmarried, and except during pregnancy, she never menstruated, but she was never unwell from it. Her general appearance is rather masculine; it appears, therefore, that in her, as in all viragos, the sexual functions require a powerful excitant, such as pregnancy, to cause them to be energetically performed. The menstruation appearing in such a person during pregnancy may be regarded as a wise effort of nature to relieve the local fulness of the sexual organs, which might prove injurious.—*Lond. Med. Gaz.* Nov. 1840, from *Med. Correspondenzblatt.* Bd. 9. No. 31.

5. *On the Mechanical Functions of the External Ear.*—There is an exceedingly interesting paper on this subject in the Number for January last, of our esteemed transatlantic cotemporary, the *Edinburgh Med. and Surg. Journ.*, by Dr. James Sym, of Ayr. We have room at present only for the following summary of the author's views.

1. The external ear protects the *membrana tympani,* and at the same time contributes to a knowledge of the direction of sounds.

2. The *membrana tympani* presents a large recipient surface for sonorous impulses, which draw its apex outwards.

3. The ossicula of the tympanum constitute a system of levers by which the motions of the *membrana tympani* are transmitted to the *fenestra ovalis,* with their extent diminished but their momentum preserved.

4. The laminæ of the cellular bones which surround the ear convey vibrations from the larynx by means of the ossicula to the *fenestra ovalis;* and these have their extent increased whilst their momentum remains the same.

5. The combined effect of the difference of extent of the *membrana tympani* and *fenestra ovalis,* and the difference of range of motion of the point of the malleus and base of the stapes, is to concentrate the impulses of the air, and adapt them for being transmitted without loss to a denser fluid.

6. The stapes is raised from the *fenestra ovalis* by the impulses of the sonorous undulations.

7. The muscles of the typanum restore the *membrana tympani,* and the base of the stapes to their quiescent position.

8. The *fenestra rotunda* permits the pressure of the atmosphere to act through the Eustachian tube upon the water of the labyrinth so as to enable the stapes to be raised.

9. The water of the labyrinth oscillates over the auditory pulps by the alternate suction and pressure of the stapes, and this excites the sensation of hearing.

10. The extent of oscillation is regulated by the cochlea, the laminæ of which expand and contract according to the degree of friction to which they are exposed.

11. The aqueducts are diverticula for receiving the water displaced by the expanded laminæ.

12. The petrous bone deafens the internal ear by excluding such vibrations as are not transmitted by the ossicula.

PATHOLOGICAL ANATOMY.

6. *Perforations connecting the Œsophagus with the air tubes of the Lungs.*—Dr. Osborne exhibited to the Dublin Association of Physicians two preparations exhibiting the above lesion.

The *first* was taken from a young man who enjoyed good health till about four months previous to his death. At that time he was first observed to cough always after swallowing liquids. This increased so much that he was at length obliged to abstain entirely from drinking. On the morning of his death he was eating a breakfast of beefsteak, when he was seized with a fit of suffocation, and was brought to the hospital gasping for breath. A probang was passed with a view to remove the obstruction, but no improvement was obtained, and in a few minutes he died.

On examination after death nothing was found in the larynx or œsophagus to account for this sudden catastrophe, and the parts were on the point of being closed, when one of the assistants happening to put his finger down the œsophagus, felt something rough at the side of it, adjacent to the bifurcation of the trachea. This produced a further inquiry, and it was ascertained that a perforation had taken place exactly in the raphé above the bifurcation, that a portion of a piece of gristly beef had passed through it, which unfortunately for the patient had been divided into two portions, one of which had stopped up each of the bronchi, while it had been retained in its situation by a large portion connected with it, which remained in the œsophagus. The orifice through which it had passed was a longitudinal slit, which, when expanded, would form an opening equal to a fourpenny piece. There were no vestiges whatever of ulceration, or of any diseased process around the orifice; and Dr. Osborne stated his opinion to be, that this was a case of congenital defect resembling cleft palate; that owing to some accidental circumstance it had become enlarged four months ago, when swallowing fluids was followed by a cough, and the irritation attendant on their escape into the bronchial tubes; that the immediate cause of death was an irritation producing a necessity for coughing, unfortunately at the moment when the piece of beef had arrived opposite the orifice, when the unfortunate patient being obliged to make a sudden and forced inspiration preparatory to the cough, the beef was sucked into the trachea, and each lobe of it also sucked into a bronchial tube, which were thus as it were *corked up*. Perhaps there is not on record a more remarkable instance of loss of life from so singular a combination of circumstances: 1st, A perforation of the œsophagus penetrating the trachea just above the bifurcation; 2dly, The patient making a forced inspiration just at the moment when a piece of meat was in the act of passing the perforation: and 3dly, The meat happening to be divided into three lobes, one stopping up each bronchial tube, while the third remained in the œsophagus, and thus maintained it in its position.

The *second* case was that of an individual who appeared to have possessed intellectual energies far above his station in life. He was a working shoemaker, and burthened with a family, but found time to combine the labours of authorship in various departments, with those of a political orator, and Methodist preacher. About eleven months previous to his death he first experienced a difficulty in swallowing, which gradually became painful. When the patient was admitted into the hospital, he complained of lancinating pains in the œsophagus, even when not engaged in swallowing, which usually belong to the progress of scirrhous and cancerous disease in that part. The passage of the œsophagus tube, however, in the hands of one of the ablest surgeons of Dublin, failed to detect any, even the slightest stricture. Under treatment, the state of his stomach was much improved, but no improvement of deglutition obtained, and he went to the country. His condition did not become sensibly worse till about seven weeks before his death: then he was tormented with cough on every occasion of swallowing, or whenever he lay on the left side, and continued in this state of suffering till his death.

An opportunity of examining the body having been offered by the family, a very remarkable correspondence between the symptoms and the disease was brought to light. The greater part of the œsophagus was so much diseased that in the preparation it can scarcely be recognized. The ulcerations in several places formed large excavations in the mass of adjacent scirrhous structure. In the portion adjacent to the bronchial tube, a peculiarly large excavation extended, engaging in it several of the bronchial glands, and there is an oval perforation with thin jagged edges, forming a direct communication between the œsophagus and the air tube. The size of this being nearly one inch in length and half an inch in breadth, we can readily understand: 1st, How swallowing any thing solid or fluid produced coughing; and 2dly, How some degree of ease was obtained by lying on the right side. It is also to be observed, that although both lungs were healthy, yet that at the apex of the left lung a collection of miliary tubercles were in progress of formation; this being a result of the peculiar irritation to which that lung was exposed, analogous to the case described by Dupuytren, in which there were no tubercles in the body, except round a pin adherent in the lung.

Both those cases illustrate a lesion which has not been described in any work that has come into Dr. O.'s hands, and which must be of great rarity, since no preparation of it is in the museum of the College of Surgeons, or in that of any other collection respecting which he has made inquiries. Perhaps, however, it has not been sufficiently sought for, and the communication of those cases to the association may be useful, if it excites attention to the subject. As perforations between adjacent mucous membranes in other parts are not unfrequent—witness those between the vagina and rectum, the colon and stomach—this occurrence between tubes so closely adherent as the œsophagus and air-tubes may be *á priori* expected to take place, and the above cases showing that it actually does take place, it is to be inferred that the absence of observations of a similar kind has arisen from its having escaped observation, in consequence of pathologists having not sufficiently searched for it.—*Lond. Med. Gaz.* Oct. 1840.

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7. *Spontaneous Rupture of the Heart.* This accident is sufficiently rare to render the following examples of it interesting:—

Case I. *Spontaneous Rupture of Right Auricle—life continued ten hours.* By William Stroud, M. D.—F. P., aged 29, after anxiety and vexation endured for a considerable time, and after having been liable to profuse bleeding of the nose, during the spring season, for many years, was, on the non-occurrence of this bleeding, subject for six weeks to a sense of fulness in the head, with lassitude and somnolency. On the morning of April 27, 1839, after having returned from Covent Garden Market, he was seized with faintness, giddiness and vomiting, and insensibility. The pulse became imperceptible, and he was apparently in a dying state. He was promptly bled by Mr. Symes, to three pints, recovered a little, continued complaining of great tightness of the chest, and weight at the heart, but died the same evening.

The pericardium contained a quart of blood which had escaped through an opening in the right auricle just below the insertion of the vena cava superior, the edges of which were not attenuated or apparently ulcerated. The author accordingly suggests the prudence of relieving plethoric oppression, even where signs of structural disease in the sanguiferous system are not evident. In this patient the heart was large and loaded with fat.—*Lond. Med. Gaz.* June 12, 1840.

Case II. *Rupture of Right Ventricle—life continued eighteen hours.* Mr. Smith exhibited to the Pathological Society of Dublin, the heart of a man, who for two years previous to his death had suffered from repeated attacks of rheumatism. He never complained of any affection of the heart until the night of the 11th November, when he was suddenly seized with symptoms of collapse, and anxiety about the præcordia; his pulse fell to forty in the minute, his extremities became cold, his countenance pale, and his whole body was bedewed with cold perspiration. He remained in this state for eighteen or nineteen hours, and died upon the 12th. Upon examination after death, the pericardium was found distended with blood, and a small lacerated opening was seen in the apex of the right ventricle, near the septum: the parietes of the ventricle became gradually thinner towards the seat of rupture; in other respects the heart was healthy. From a table drawn up by Dr. Townsend, it appeared that of twenty-five cases of rupture of the heart, in only three was the right ventricle the seat of the rupture; and of nineteen cases collected by Bayle, but three occupied the right ventricle. Mr. Smith remarked that the case he brought forward he considered interesting from its rarity, but it derived an additional interest from the circumstance that the symptoms would lead to the supposition that the rupture had taken place eighteen hours before death: life being prolonged under such circumstances could only, he conceived, be explained upon the supposition, that a coagulum had blocked up the opening in the right ventricle; he supposed that death at length took place when the coagulum was expelled, and concluded by alluding to the cases recorded by Cruveilhier and others, where a firm fibrinous concretion plugged up the fissure.—*Dublin Journ. Med. Sci.*

8. *Encephaloid Disease of the Bones, Liver, and Lymphatic Glands of the Chest and Abdomen.* By Mr. Smith.—A man, 77 years of age, remarkably large and muscular, and having all the appearance of general good health, was admitted to the hospital on the 17th of January, with the ordinary symptoms of chronic bronchitis, attended with emphysema. He remained without any peculiar alteration till a few days before his death, when he was attacked with pneumonia of the lower lobe of the right lung, which terminated fatally on the 23d.

On dissection the usual phenomena of bronchitis with emphysema were discovered, and in addition to these the right cavity of the pleura contained a large quantity of sero-sanguineous fluid. The lower lobe of the right lung presented an example of pneumonia in its third stage; the rest of that organ was free from inflammation. The surface of the lung at the diseased portion was of a bright fawn colour, produced by a stratum of purulent matter lying immediately under the pleura, and when an incision was made into it a large quantity of purulent matter escaped. Throughout the remainder of the lungs, on the surface as well as in the substance, there were a number of encephaloid tubercles of various sizes. The glands of the posterior mediastinum were in a similar state of degeneration. They formed a considerable tumour, and had elevated the pleura from the spine on the right side, and from the aorta on the left. The aorta adhered so firmly to these glands, that it could not be separated from them without some difficulty; but it did not appear to have suffered any compression, nor did there seem to be any impediment to the flow of blood. On opening the abdomen the liver displayed a fine specimen of the *tubera diffusa* of Farre. The tubercles existed both deep in the substance, and also on the surface of that organ, and in the latter situation presented the usual cup-shaped indentations. The gall-bladder and the biliary ducts were healthy. It was observed that the process of softening generally commenced in the interior of these tubercles, so that when one of them in this state was examined, a cavity was found in the centre resembling that of an abscess. The abdominal glands along the course of the aorta and *vena cava* were similarly diseased, and adhered to the neighbouring vessels. The remaining organs of the abdomen were healthy, excepting the spleen, the capsule of which presented the cartilaginous degeneration. The body slipped off the table during the dissection, and one of the vertebræ fractured. This led to an examination of these bones; and on removing a portion of the spinal column opposite to where the thoracic glands were found so much diseased, a distinct circumscribed tubercle, of a pale rose colour, was met with in the centre of one of the bodies of the vertebræ. The ribs, clavicle, and sternum presented similar morbid degenerations. In some of the bones the encephaloid matter was found deposited in the form of tubercles, in others in a state of infiltration, as it were, through their substance. The aorta from its commencement to its bifurcation was covered in various parts with atheromatous and earthy deposits; and in many places the internal coat of the artery was destroyed.—*Ed. Med. and Surg. Journ.* from the *Dublin Journal of Medical Sciences*, July, 1840.

MATERIA MEDICA AND PHARMACY.

9. *Preparation and Employment of the Sesqui-Ioduret of Iron.*—M. OBERDOERFFER, a pharmaceutist of Hamburgh, gives the following formula for the preparation of this salt, which he says may be preserved a long time without decomposing:—Mix in a glass vessel half an ounce of iodine, a drachm and a half of iron filing, and an ounce of water; when the reaction is completed, the mixture is to be slightly shaken until it becomes of a clear green colour, due to the ioduret of iron. Then dilute it with four ounces of water, filter and also pass some water through the filter. Afterwards add to the solution two drachms of iodine, which is readily and quickly dissolved. A deep reddish brown liquor results, to which a sufficient quantity of water is added to make the weight of the whole ten ounces. Each drachm contains about four grains and a half of iodine. This preparation has been long employed at the General Hospital, Hamburgh; its effects are the same as those of the ioduret of iron; it must be given internally, however, in smaller doses. The best form for its administration is in syrup.—*Zeitschrift für die gesammte Médicin*, June, 1840.

In our Number for February last, (p. 449,) we gave a formula for a syrup of ioduret of iron, which, from considerable experience, we can recommend as a most valuable preparation. It can be preserved for a long time without becoming decomposed, and produces the best effects of the two articles which enter into its composition. The comparative value of this and the sesqui-ioduret must be decided by future experience.

10. *Socotrine Aloes.*—"This plant (the aloe) has rendered Socotra famous from the earliest period. It is found growing on the side and summits of the limestone mountains, at an elevation of from 500 to 3000 feet above the level of the plains. The plant appears to thrive only in parched and barren places; its leaves are plucked at any period, and, after being placed in a skin, the juice is suffered to exude from them. This is afterwards carried principally to Muscat, where the price varies according to the quality, from two to four shillings the English pound. Socotrine aloes, if care were taken in collecting them, would be the finest in the world; but this is not the case, and their value becomes proportionably deteriorated.

"When the authority of the sultans of Kisseen was better acknowledged than at present, they monopolized the whole produce of the island, and stone walls, dividing its surface into separate portions, were carried with immense labour over hill and dale. These still remain, but now any one collects the plant, when or where he thinks proper, and this they only care to do when the arrival of a ship or buggalo creates a demand. Every part of the island affords this useful plant, but more especially the western, where the surface is thickly covered for miles. In 1833, only two tons were exported."—*Wellsted's Tour on the Island of Socotra.* T. R. B.

11. *Dragon's Blood.*—"The trees of this are not usually met with at a less elevation than 800 feet, and they frequently occur as high as 3000 feet above the level of the sea. The trunk, at the height of six feet from the ground, varies from twelve to eighteen inches in diameter, and its height is from ten to twenty feet. The gum exudes spontaneously from the tree, and it does not appear usual on any occasion to make incisions in order to procure it. Two kinds were shown me; one of a dark crimson colour, called *moselle*, is esteemed the best, and its price at Muscat is from six to eight rupees, the Bengal seers. I was frequently assured, that not one-tenth of the quantity which might be pro-

cured was ever collected by the Bedowins. As with the aloes, this appears to be consequent on there being no regular demand."—*Ibid.* T. R. B.

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12. *Ointment for Itch.*—Dr. De la Harpe, chief physician of the Hospital of Lausanne, gives in the *Gazette Médicale de Paris* (July, 1840,) the following formula for an ointment which he says he has very successfully employed in the treatment of upwards of 400 patients. Flowers of sulphur 16 parts, sulphate of zinc 2 parts, powder of white hellebore 4 parts, soft soap 31 parts, lard 62 parts.

The mean duration of treatment with this ointment was in 1836 eighteen, in 1837 fifteen, in 1838 eleven, and in 1839 ten days.

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

13. *Spasm of the Glottis dependent on some unknown sympathy, or some remote influence possessing no traceable communication.*—Professor Porter made some interesting observations on this subject to the Surgical Society of Ireland, a report of which we transfer to our pages from the *Dublin Medical Press*, (29 Ap. 1840.)

The records of surgery, Prof. Porter remarked, are full of cases which lead us to believe in the existence of this affection. A very remarkable case of the kind is given by Mr Kirby in the second volume of the Dublin Hospital Reports, in which a piece of beef stopped in the œsophagus below the cricoid cartilage, and in which the man died of spasm of the glottis without any sign or appearance of pressure on the larynx sufficient to account for death. Dr. Stokes gives a case of spasm of the larynx from the stoppage of a piece of money in the œsophagus. Perhaps one of the most satisfactory cases of the kind occurred in a child which was left alone in a room by its mother, playing about. On her return, she found it in a state of suffocation, and brought it to the Meath Hospital. On examining the fauces, I thought I could feel something in the œsophagus. I administered a brisk emetic, and this iron ring which I hold was thrown up out of the œsophagus. The child was suffering from violent spasm, and would, in all probability, have died if the ring had not been rejected, and yet any one who inspects it will perceive at once that it could not produce such a degree of pressure on the œsophagus as to endanger life. Another case in which a piece of soft bread stuck in the œsophagus of a child was attended with similar symptoms of suffocation, and relief was obtained by pushing it down into the stomach with a probang. All these cases you will say are presumptive, but not positive proofs of the affection I speak of. I turn now to two cases to prove that there may be such a thing as spasm of the larynx from such influence, and that this unknown sympathy may be carried so far as to destroy life. In July, 1837, I was called to see a case of acute laryngitis; the case was attended by myself and a gentleman well known as an excellent stethoscopist. I went, and finding the man in a state of suffocation, opened the trachea. He was pronounced by the stethoscopist to be labouring under acute laryngitis. After the operation the man expressed great relief; he appeared as well as any person I ever saw after an operation, and yet in the course of three days he died. On examination after death, I found the larynx as sound and healthy as ever I had seen it in my life; death had been produced by the bursting of an aneurism of the aorta. Yet, so urgent were the symptoms of spasm of the glottis, that the man would have died in a few hours if he had not been operated on. But perhaps this case does not go far enough. It may be said, that the aneurismal tumour might have pressed on the recurrent nerve, and that this by paralysing one set of muscular fibres might have caused the rest to act spasmodically.

I come now to speak of a different case altogether, a case in which there could be no pressure likely to affect the functions of the glottis. I think it was in the month of December last, a child was brought to the Meath Hospital, who was said to have swallowed a stone. I examined him with the stethoscope, and found the usual indications of the presence of a foreign body in the trachea. In the course of a few hours after admission, the child was seized with a paroxysm of suffocation and difficulty of breathing, resembling that which occurs in acute laryngitis, and appeared almost moribund. I made a free incision into the trachea, with perfect relief to the child, but could not succeed in finding the stone; the breathing became quite relieved, the mechanical obstruction remaining still the same. He remained tolerably quiet for a few days, until the wound of the trachea began to close, when the symptoms of suffocation again returned, and to such a degree as obliged me to open the trachea again. I operated with the same success as before, and every thing went on well until the wound began to heal, when the recurrence of spasmodic symptoms obliged me to operate a third time. I now kept the wound open, every thing went on well, and in a short time afterwards the stone was expelled by coughing, in the natural way, and not through the wound. This proves that there may be spasm of the glottis from a remote influence, and independent of any direct irritation of the larynx, for in this instance however the stone might interfere with the passage of air into the lungs, it never interfered with the functions of the larynx, or brought life into danger as long as the opening in the trachea remained pervious. Here then are cases to prove that there may be spasm of the glottis, independent of direct irritation of the larynx, and connected with some remote influence, and attended with symptoms of such intensity as to require an operation to preserve life. There is another point in the last case I detailed, which I shall direct attention to, although it does not exactly bear on the subject under consideration. I have now in my memory a recollection of four cases of foreign bodies, loose and moving freely in the trachea, in which an operation was performed, and yet the foreign body was not got rid of for a considerable time. The first of these cases occurred in 1837, in the practice of Mr. Cusack. Before the operation, the foreign body could be felt moving so freely up and down the trachea, that we were sure it would be expelled with considerable force, and shut down the window sash, lest it should be driven through the open window and lost. The boy was operated on, but the foreign body was not expelled, nor could it be got out. It was thought necessary to enlarge the opening in the trachea once or twice, but without any effect. At last the boy's father got tired, and took him down to the county of Waterford; while he was on the journey the stone was thrown up through the natural passage. Here is a stone taken from the trachea of a child, on which I operated some time since. You will perceive that its long diameter is greater than the transverse diameter of the trachea of a child three years old. If it was thrown with its long diameter, in the long diameter of the trachea, it might have been expelled by a fit of coughing. In conclusion, I may observe, that I have seen some instances in which foreign bodies lay in the trachea for a considerable time, without exciting much inconvenience. In a case operated on by Dr. Houston, a double tooth with large fangs, lay for a considerable time in the trachea without causing much annoyance, and Mr. Liston has given a case, of a sharp piece of bone lying in the trachea for six months.

Dr. Beatty observed that Prof. Porter's observations went to establish, what he, Dr. B. believed to be the fact, viz:—that spasm of the glottis is capable of being produced by a variety of causes, and that authors such as Kopp, who attributes the disease in children to enlargement of the thymus gland, or Dr. Lee, who attributes it to paralysis of the nerves of the larynx, have taken a narrow and imperfect view of the question. Their views are not to be looked upon as explaining the nature of spasm of the glottis; for the cause of the disease, as Mr. Porter has shown, was not single but manifold. Some cases which he had already brought before the public, bore on this view of the case, for he had shown, that irritation in a distant part is not unfrequently the cause of spasm of the glottis. He was convinced from circumstances which had come under his notice, that spasm of the glottis was one of the earliest symptoms of incipient hydrocephalus. He had seen it occur in children, who had afterwards exhibited unequivocal symptoms of hydrocephalus, verified by dissection, and in whom, no trace of laryngeal disease could be discovered. In almost every one of the cases, the most prominent symptoms were crowing inspiration and paroxysms of suffocation. He did not, however, mean to say, that the spasm of the larynx was to be referred in all cases to irritation of the brain, for it is often seen in connection with enlargement of the thymus gland, and other affections. The consideration of this subject was also important, as leading to a more accurate examination in all cases where any symptom of spasm of the glottis appeared among children. Some children have the crowing inspiration at a very early period of infancy; they awake out of sleep with it, and are apt to lose their breath from trifling causes, as for instance, from the act of swallowing fluid. The symptom is too often overlooked, or if noticed, is frequently attributed to disease of the stomach, but the practitioner who is acquainted with its real nature, will pay the most watchful attention to the state of the brain. The cases brought forward by Professor Porter, showed that spasm of the glottis may be superinduced by the agency of remote causes. The fact of irritation of the larynx from disease of the brain, could be understood to a certain extent, for the influence of the brain on the muscles of the larynx, was a point established by repeated observations. There is another affection however, which, although merely one of function and not connected with organic disease, appears in some instances capable of producing very violent spasm of the glottis. Dr. Beatty had witnessed some instances of this, and had seen it go very far, in fact so far, that many persons would look upon it as demanding an operation. On these grounds Dr. Beatty looked upon Professor Porter's communication, as one of great interest.

Dr. Houston said a circumstance had occurred to him, which tended to bear out the views put forward by Prof. Porter. The case to which he alluded, occurred when he was a student. It was one of aneurism of the arteria innominata, just where it lies on the trachea. It was a flattened sac, not as large as a walnut, simply adhering to the outer surface of the trachea, without any communication with it, or without exciting any inflammation or morbid change. Yet the patient died with symptoms of croup—with violent spasmodic contraction of the muscles of the larynx, incessant cough, and difficulty of breathing, but without any appreciable sign of pulmonary disease. On examination after death, the glottis was found quite pervious, and there was no reason to think that the pressure of the aneurismal tumour could be such as to give rise to the fatal termination.

Professor Porter said that a case similar to that alluded to by Dr. Houston, had been given by Mr. M. Collis, and that the preparation was in the museum at Park street.

Dr. Geoghegan said there could be no doubt that disease of the brain was sometimes the cause of this spasm of the glottis. There was also another cause which was known to produce it, he alluded to painful and difficult dentition.

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14. *On Nervous or Spasmodic Asthma.* By Robert J. Graves, M. D.—It is evident, that to account for the spasmodic symptoms of asthma, we need not have recourse, with Doctor Clutterbuck, to the diaphragm or intercostal muscles, but to the muscles of the trachea and bronchial tubes themselves; on the whole, therefore, we may conclude, that those who have returned to the opinions professed by our predecessors, are not so much mistaken as their opponents pretend. Even when the paroxysm is intense in degree and duration, where the patient is obliged to sit up half the night; where any attempt to lie down produces symptoms of asphyxia; where hours are spent in extreme distress with lividity of face and lips, gasping, loud wheezing, and great fulness of the vessels of the head and neck; even under all these circumstances, the attack may be nothing but a fit of pure spasmodic asthma. A person thus affected may spend a whole night in the way I have described, and yet, towards morning, he may sleep a few hours, and awake refreshed and comparatively free from dyspnœa, and in the course of the day may be able to go up stairs quickly, run, ride, even hunt without difficulty. I have in my recollection, the cases of several young men subject to severe paroxysms of asthma for five or six nights in succession, and

who, immediately after the paroxysm disappeared, could use any active exercise as well as the most vigorous and healthy of their companions.

These facts establish the existence of a disease deserving the name of spasmodic asthma, and show that very violent paroxysms of difficult breathing may occur in persons free from organic affection of the heart or lung. When, however, any permanent change in the structure of the respiratory or circulating apparatus exists, then such changes become the exciting causes of paroxysms of dyspnœa, often closely resembling true spasmodic asthma, but readily distinguishable from it, if due attention be paid to the history of the patient's sufferings and his state between the fits. I have now met with so many cases of young persons in whom no trace of any organic complication existed, that it seems to me more than probable, that spasmodic asthma is not so rare a disease as is imagined. In a little boy, some particulars of whose case I formerly published, the attacks were frequent, violent, and to all appearance, purely spasmodic; he got a very severe paroxysm of gout (hereditary from both his father and mother) in his foot, and has never since had asthma, though four years have now elapsed, and he has been subject to all the excitement and violent exercises of a public school. Mr. Fleming, now of the Isle of Man, and Sir Philip Crampton, attended with me a young gentleman, aged about twelve, who was subject to violent dyspnœa, increased by even the most gentle exercise; indeed for many months he could not walk even quietly in his room, without incurring the risk of suffocation for want of breath, attended with palpitation, wheezing, and all the symptoms of approaching asphyxia; every remedy we could devise was tried most perseveringly for a year, without the slightest benefit, when he got typhus fever, from which he narrowly escaped, but since his recovery, he has never had even the least vestige of his former complaint. These two cases exemplify, in a remarkable manner, the influence which the general state of the constitution often exerts on local affections.

Asthma, like all other nervous diseases, is subject to the most unaccountable variations, and is most uncertain as to the effects which our remedies, or the influence of physical agencies, produce. The following is an example. In December, 1839, I attended two gentlemen residing in the same street, and each about forty-five years old; neither was liable to any other disease, and they were both short and stout; on a very cold morning I found one of them very ill indeed; he had not slept at all during the night, and had every moment been on the point of smothering from asthmatic dyspnœa. The extreme violence of the paroxysm he attributed to the fact, that his bed-room chimney had smoked occasionally during the night, and the weather was so cold, that he was afraid to open the window to let out the smoke. I ordered him to change his room, and I then proceeded to visit his neighbour, and found him sitting in a room full of smoke; he apologized to me for introducing me into so disagreeable an atmosphere, and explained, that when the fit of asthma became very bad, the only sure means of obtaining relief, which he knew of, was to get a good coal fire lighted in the grate, which being done, he made his servant occasionally obstruct the progress of the smoke up the chimney, and thus maintain a certain density of smoke in the room; this never failed, he assured me, to bring relief. This gentleman was of very active habits, was agent to several large properties, and consequently obliged to travel much about the country; experience had proved to him, that he could derive no benefit from turf smoke, and therefore he never stopped at any inn where they had no other fuel but turf, as he felt himself insecure unless he could procure coal smoke in case of an asthmatic attack. Such *idiosyncrasies* will ever baffle the researches of the mere morbid anatomists, but afford a useful lesson to the practical physician.

The phenomena of this disease are calculated to throw much light on the nature of what has been termed wheezing. A person subject to asthma, who has been breathing tranquilly the whole evening, may be attacked towards midnight with difficulty of respiration, and a wheezing so loud as to be heard on the stairs; this will continue for several hours, and then terminate, in some with a copious discharge of sputa, *in others without any expectoration whatever*. When we apply the stethoscope to the chest of a person so affected, we hear a great number of bronchitic rales, showing that the larger and smaller tubes are both engorged; this is a matter of frequent occurrence in cases of dry asthma, where there is no expectoration, and where the fit terminates in a few hours, without leaving behind the slightest trace of pulmonary derangement. Hence we are led to the conclusion, that sounds of various characters and remarkable intensity may be produced without any inflammation whatever, and in fact without any remarkable alteration in the secreting functions of the bronchial mucous membrane, and that these sounds may wholly disappear where there has been no expectoration, and consequently where the bronchial tubes have not been cleared out. This is a fact worthy of being held in memory. Stethoscopists, when they hear bronchial rales, are apt to attribute them to the existence of bronchial inflammation; but here, with distinct proofs of the absence of inflammation, you may have a *maximum* of bronchial rales, and in the space of a few hours, you may not have a single sound at the very points where so many were audible before. It is obvious, therefore, that some of the received doctrines on the subject of bronchial rales, are still open to discussion. The practical inference, however, to be drawn from this fact is, that we should study such rales with great attention, and in connection with other signs and symptoms, lest we be induced to treat antiphlogistically a case in which depletion might be uncalled for or injurious, an error by no means unfrequent among those who rely too exclusively on physical signs.

As to the treatment of spasmodic asthma, I have nothing to add to what is generally known, except that it is often serviceable to stupe the whole chest during the fit with flannel wrung out of water, as hot as can be borne; and that, in some, much advantage is derived from small but very frequently repeated doses of ipecacuanha wine, mixed with an equal portion of good tincture of castor.—*Dublin Journ. Med. Sci. Nov.* 1840.

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15. *On the Exanthemata and Enanthemata.* By Dr. Eisenmann. Linné appears to have been the first to point out the analogy which exists between the cutaneous eruptions and those of the mucous membranes. But since the publication of the works of Rœderer, Broussais, Bretonneau, Louis, Cruveilhier, Andral, &c., this analogy may be regarded as proved. The name enanthemata has therefore been applied to the latter eruptions, and they, like the exanthemata, constitute characteristic symptoms of special maladies. Dr. Eisenmann, in his long and elaborate essay, proves the perfect similarity of the symptoms, progress, and termination of the eruptions which occur on the mucous membrane with those seen on the cuticular surface. He shows that pustular, vesicular, erythematous, &c. eruptions are common to both surfaces; that the termination in suppuration, resolution, desquamation, &c. equally occur in both forms; the last, indeed, desquamation, being now clearly proved by the researches of Boehm and Henle, who discovered the debris of the epithelium of the intestines amongst the mucous and feculent matters passed during the continuance of these diseases. He also shows that these enanthemata are contagious and epidemic, the same as the exanthemata.

M. Eisenmann divides the enanthemata into five genera, to which he has in the meantime added a sixth, to include an anomalous form of disease. The following are the genera he describes:—

1. Erythema of the mucous membrane, terminating in desquamation, a form of disease distinctly described by Boehm and Henle.

2. Vesicular eruption of the mucous membrane; observed and described by Jahn, as occurring on the palatine arches during measles.

3. Papulæ of the mucous membrane. Several species of this form have been described, as aphthæ, the papular eruptions seen on the throat and fauces by Rœderer in gastric fever, and those seen so commonly on the same parts during the influenza of 1837.

4. Pustules of the mucous membrane, as seen in the aphthæ and eruptions of the mucous membrane in dothin-enteritis.

5. Fungi or tubercles of the mucous membrane, as has been frequently seen and described in typhoid fevers, in malignant puerperal fevers on the vaginal mucous membranes, common in dysentery, and in diphtheral inflammation of Bretonneau.

6. The eruptions which have not yet been classed, as the patches described by Boehm in the neighbourhood of the ileo-cæcal valve, and which seemed to be formed by a morbid state of the glands of Peyer.—*Edinburgh Med. & Surg. Journal*, Jan., 1841, from *Hufeland's Journal*, March, 1840.

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16. *On Rabies.*—By M. Breschet.—Doubts have lately been raised as to the contagious nature of the poison of rabies, and M. Breschet, in order to determine this point, read a paper before the Royal Academy of Sciences, detailing experiments which he had made with M. Dupuytren thirty-five years ago, which seem to prove beyond a doubt the contagious nature of the poison.

Some diseases proper to one class of animals are not developed spontaneously in others. Such appears to be the case with rabies, which seems to be peculiar to the genus *Canis*, but more especially to that well known species, the domestic dog. It is from this species that the disease is usually transmitted to others of the Mammalia, and to man.

Rabies in man is never a spontaneous affection, nor the result of a combination of moral or hygienic causes; in every case it may be traced to the inoculation of rabid matter. It cannot be doubted that the reason why hydrophobia and rabies have been confounded arises from having overlooked the difference of those nervous affections where there is exhibited horror at the sight of fluids, difficulty of swallowing, &c., and the true communicated rabies. In this last affection, art, unfortunately, is never of any avail: whilst the symptomatic hydrophobia of the pernicious hydrophobic fevers, for example, is not necessarily fatal—or if so, only in consequence of a peculiar concatenation of circumstances.

Such are M. Breschet's views, founded on the following experiments:—MM. Breschet and Magendie collected a quantity of the saliva of a man who died of rabies, and introduced it under the skin on the dorsal region of a dog. Thirty-eight days after this inoculation, the animal was affected with violent rabies. It was made to bite other dogs, and these were all similarly affected. In continuing these experiments it was observed that the disease failed to manifest itself, or was only developed with great difficulty when the contagious principle had passed through three or four animals successively; it generally, indeed, failed to produce the disease in the third transmission. If this fact should be confirmed by subsequent experiments, it will prove the singular fact, that this poison loses its deleterious properties by passing from one individual to another of the same species.

M. Breschet, from his experiments, ascertained that, in general, symptoms of rabies came on from the twentieth to the thirtieth day after the animal was bitten. In several cases, however, he has seen three months elapse before rabies made its appearance. In many of the rabid dogs the horror at the sight of water was wanting, and these animals even drink with avidity the water which was presented to them—a fact which proves beyond a doubt that rabies and hydrophobia are two very different and quite distinct morbid states.

M. Breschet's experiments also prove the communicability of rabies from carnivorous to herbivorous animals. An ass bitten by a mad dog took on all the symptoms of acute rabies at the end of three weeks. Similar results were afforded by sheep, only that in them the disease was less intense.

The foam collected from the mouth of the ass and of other solipeds was introduced by M. Breschet beneath the skin of several dogs, and after a period of incubation of from twenty-five to forty days, produced true rabies. This experiment was several times repeated, and always with the same result; proving the transmissibility of the poison of rabies from herbivorous to carnivorous animals —a fact denied by several veterinary practitioners.

The saliva of rabid dogs was also inoculated on rabbits and guinea-pigs, and, in almost every instance, after a short period, these animals fell victims to the poison, without, however, exhibiting any symptom usually considered as characteristic of rabies.

Similar experiments on birds of different species, as fowls, ducks, crows, and birds of prey, gave negative results as to the exhibition of the phenomena of rabies. All, however, died rapidly; whilst others, on whom similar wounds had been inflicted, but were not inoculated, continued to live.

M. Breschet also made several experiments to determine whether the blood was altered in rabies. He often attempted to inject the blood of a rabid dog into the veins of a healthy dog, but as this was found to be both a difficult and hazardous operation, after a few attempts it was abandoned. He afterwards obtained the blood of the rabid animal by bleeding, and, after washing it with distilled tepid water, the fluid was injected into the vein of a healthy animal. In all these experiments, though frequently repeated, M. Breschet found it impossible to communicate rabies; and he therefore is inclined to believe that the poisonous matter of rabies, whatever it be, resides in the saliva. The foamy saliva is in reality an altered humor—a matter in a truly morbid state, and the vehicle of a deleterious principle of a true rabid virus, but the nature of which is still unknown. M. Breschet then regards rabies as a virulent and contagious disease, and not the effect of a moral affection.—*Ibid.* from *Seances de l'Acad. R. des Sc.*, Sept. 21, 1840.

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17. *On the Uncertainty of the Signs of Peritonitis and on a New Character of that Disease.*—By Luigi Sementini.—The chief object of this memoir, is to prove the fact which the author says he has tested by constant observation for upwards of forty years, namely, that in all cases of peritonitis, in whatever part of the abdominal cavity the inflammation is seated, there is pain in the pubes and upon the great trochanters; which if not spontaneously felt is always developed by pressure, and of which the severity is directly proportionate to that of the peritonitis.

This fact, which is said to be confirmed by the clinical observation of others, the author believes is explicable by the relation of the nerves of the parts in which the pain is felt to the peritoneum, and by its connection with the fasciæ and muscles about them. In addition to its value in the diagnosis of even the most obscure and latent cases of peritonitis, in all of which this sign is present in a degree proportioned to the severity of the disease, the author has found it of value as an indication of treatment, and has obtained great benefit from the application of leeches and blisters over the trochanters instead of on the abdominal walls.—*B. & F. Med. Rev.* from *Annali Univ. di Med.* Sept. 1840.

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18. *Treatment of Lead Colic with the Sulphuric Lemonade.*—M. Aran, in an interesting memoir on this subject in the *Journal des Connaissances Medico-Chirurgicales*, (August, 1840,) states that twenty-five cases of lead colic have been treated in the Hôpital Beaujon with the sulphuric acid lemonade, as recommended some years since by M. Gendrin,* and that it effected a cure in every one. It afforded relief on the second day, and the cure was complete by the fifth day.

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19. *Pure Tannin a Remedy for Excessive Perspiration.* By Dr. Charvet.—Sweating is a morbid symptom which is often so serious and inconvenient, that the practitioner is obliged to combat it by special remedies. The acetate of lead, which has been extolled of late years, sometimes causes inconveniences which hinder many practitioners from employing it in cases where its use seems clearly indicated. Pure tannin, employed as an anti-sudorific, appears to be free from these disadvantages. The author has employed it for two years at the hospital, and in his private practice, and though it has not succeeded in every case, it has in almost all.

He prescribes it in the form of pill, and in the dose of from two and a half to

* See this Journal for May, 1832, p. 233.

ten centigrammes (half a grain to two grains) in twenty-four hours, generally in the evening, with or without opium, which neither checks nor favours its action. The first time he administered it was in the case of a phthisical patient, who was already in a state of marasmus, and whose cough, fever, and oppressed breathing, were less troublesome than the general perspiration with which he was inundated every night. The patient asked for some medicine against the perspiration, which he considered the sole cause of his sufferings, and was ordered twenty-seven milligrammes (about three-fifths of a grain) of tannin. The next morning he said he had passed a good night, and hardly felt moist when he awoke. The repetition of the same dose every evening was sufficient, during several weeks, to suppress the perspirations entirely; but they returned as soon as the medicine was omitted. The dose was raised to five centigrammes (a grain), and then to eight (one grain and three-fifths), and always with the same success. The author relates several other cases in support of the anti-sudorific property which he attributes to tannin; they occurred among consumptive patients who had arrived at the last stage of the disease. They are additional examples of the activity with which tannin suppresses sweating, even when the disease from which it arises is beyond the resources of our art.—*Lond. Med. Gaz.*, Nov. 1840, from *L'Expérience.*

20. *Balsam Copaiba in Asthma.*—A writer in the *Bulletin Méd. du Midi* extols the efficacy of copaiva in the treatment of asthma.—*Journ. de Méd. et de Chirurg. Prat.*, March, 1841.

21. *Coup de Soleil.*—"One fact I may relate, which will bring in a palpable state, before my readers, the fiery heat of these regions (the coast of Arabia) in the summer months. At this season, in 1821, the British Frigate Liverpool was proceeding from Muscat to Bushire; the weather gradually increased in warmth; double awnings were spread; the decks kept constantly wetted, and every precaution used to prevent the exposure of her men; yet in one day, from a species of *coup de soliel*, she lost three lieutenants and thirty men. If, for however brief a period, they exposed themselves to the sun they were struck down senseless; vertigo followed, accompanied by foaming at the mouth. In the greater number of cases, sensation never returned. The frigate's main deck at one time is described to have resembled a slaughter-house, so numerous were the bleeding patients."—*Wellsted's Travels to the City of the Caliphs.* T. R. B.

SURGICAL PATHOLOGY AND THERAPEUTICS AND OPERATIVE SURGERY.

22. *Amputation at the Hip-Joint.* By Dr. PORCIENKO, of Wilna.—It occasionally happens that the femur is diseased to such an extent that amputation, in its continuity, becomes impossible. Under such circumstances, modern surgeons have proposed its disarticulation; an operation which Dr. Porcienko, considering its formidable nature and rare success, and attentively weighing the cases in which it has been practised, pronounces as inadmissible, however pressingly it may appear to be indicated. This opinion he does not found on the amount and difficulty of restraining the hæmorrhage accompanying the operation, but on the very nature of the diseases which it is sought to remove, (which, he thinks, contraindicate it,) and on the insufficiency of the vital forces to resist so formidable a mutilation. At least it is certain that in numerous cases, when the first dangers of the operation were surmounted, and the wound commenced to cicatrize, when, in a word, every thing seemed to promise a favourable result, death has unexpectedly occurred. The following is the history and result of three cases in which the operation in question has been performed:—

CASE I.—The first patient was admitted to the surgical clinic (Wilna) with an enormous encephaloid tumour of the right femur, extending from the trochanters to the condyles, engaging the entire circumference of the bone, and externally constituting a rounded tumour. The skin was tense—the veins enlarged and varicose—the tumour was very elastic, and gave no feeling either of fluctuation or crepitation—the leg and foot were much swollen from serous infiltration, as well as from enlargement of the bones. Finally, the disease seemed to affect the femur even above the trochanters. The opposite limb and entire body was emaciated; there was, however, no hectic. The tumour was the seat of violent and rapidly augmenting pain.

It being determined to disarticulate the femur, the operation was performed, 12th March, 1820, by Venceslas Pelikan, according to Larrey's method. The femoral artery being tied beneath Poupart's ligament, the internal flap was scarcely made when so copious an hæmorrhage occurred, that a sponge thrust into the wound did not restrain the blood from gushing from every part of it. Several ligatures were applied, and the violence of the hæmorrhage moderated: but the patient had already lost an enormous quantity of blood. The head of the femur being detached, the rest of the operation was effected with the utmost facility, and the hæmorrhage, on forming the external flap, was inconsiderable. The blood, however, still flowed, guttatim, from the entire surface of the wound, and continued to do so till the whole surface was covered with a styptic powder.

For some days after the operation, the patient was extremely feeble; cordials, &c., were employed, and on the 5th day, the wound suppurated favourably, and, excepting some febrile reaction, his condition appeared extremely promising. Things proceeded, on the whole, favourably, but so slowly, that two months elapsed before cicatrization commenced to be established. The patient then committed a slight error of regimen, which caused a gastric fever, that soon assumed typhoid symptoms, and terminated in death on the 16th of May.

On examination after death, the profunda artery was found to arise above Poupart's ligament, which accounted for the hæmorrhage not having been at all controlled by the preliminary ligature of the femoral artery. The cotyloid cavity was filled with healthy pus, which had, however, found its way through the bony walls, into the pelvis. The only diseased appearance in the abdomen was a considerable serous effusion, its viscera, as also those of the thorax, being perfectly healthy.

Case II.—A female, aged 50, and much debilitated from plica, was admitted to the Surgical Clinic, September 25, 1821. During a cold and wet spring, in which she had been exposed to much hardship, she became affected with severe pain in the left thigh. After a short period, the patient suffered still more severely from alternating sensations of burning heat and icy coldness, and exquisite pains in the thigh, particularly at night. At length the entire left thigh became swollen, and an abscess formed at its inner side, which, on opening, gave exit to an enormous quantity of sero-purulent matter. The patient, however, experienced no relief, and a fœtid discharge continued till a sequestrum, six inches long, came away. At this period the plica of the hair commenced.

The plica was cut after a short time, after which the thigh became again swollen and the seat of the most excruciating pains. Numerous openings giving exit to pus, formed in the soft parts, which, at the date of her admission, were covered with deep cicatrices. The leg was bent on the thigh; the patient could only lie on the back, was exhausted by severe and incessant suffering, and was in an advanced state of marasmus.

During two months an appropriate treatment was adopted, at first with some trifling benefit. In November, however, the thigh became again swollen, fever set in, and a fresh abscess opened without the slightest relief. The matter became diffused throughout the entire thigh, and hectic fever set in.

On the 15th December, 1821, Dr. Porcienko amputated the limb at the hip joint, according to Larrey's method, imputing the enormous hæmorrhage, which had occurred in the first case, to the accidental anomaly in the distribution of the artery. As soon, however, as the internal flap was formed, so copious a hæmorrhage occurred, that all the zeal and activity of his assistants and himself in tying the arteries, restrained it with the utmost difficulty. After the operation, the patient was in a state of the utmost exhaustion, on account of which, cordials, &c., were administered, but not with such advantage as in the foregoing case.

The next day the wound became extremely painful; violent fever soon set in, accompanied with dry skin, headache, pains in the limbs, dry tongue, and burning thirst, the right hypochondrium being, at the same time, tense and extremely painful on the slightest pressure; the flaps separated, exposing an enormous gaping wound; and, in fine, the patient died on the 12th day.

On examination after death, the ligature was found detached from the femoral artery, which was closed by a firm coagulum; the cotyloid cavity was filled with pus, and its brain carious. The thoracic and abdominal viscera were perfectly healthy. The neurilema of the sciatic nerve seemed somewhat red.

Case III.—On the 27th of April, 1834, Raycha Mordechow was admitted to the Surgical Clinic. Her face was pale and puffed—she was extremely emaciated, and the posterior part of the left thigh was occupied by an enormous tumour extending from the ham to the two trochanters. When aged 25, and in her fourth pregnancy, she was suddenly attacked with pain in the left ham, extending with the most extreme violence along the sciatic nerve, and which only diminished in violence on the appearance of a moveable tumour in the ham. After her accouchement she tried a variety of means without experiencing any benefit from them; on the contrary, the tumour rapidly increased in size, extending along the back of the thigh, so that in ten months she became unable to walk. A vesicle then formed on the heel, which breaking, afforded an ichorous discharge that excoriated the neighbouring parts. When admitted to hospital, the tumour extended from the trochanters to below the popliteal space, the bulk of the thigh being truly enormous. The skin covering the diseased mass was tense and livid, and the veins dilated and gorged with blood. The tumour was no longer moveable, being adherent to the skin, and, partially so, to the subjacent parts. In parts, it was of cartilaginous hardness: in others, commencing fluctuation could be detected. The disarticulation of the thigh being determined on, Dr. Porcienko entrusted the operation to his assistant, Dr. Korseniewski, to whom, (his chief object being to avoid loss of blood,) he recommended the method of Dr. Cole, with some slight modifications which he suggested.

The 3d of May the operation was performed. The femoral artery was compressed at the point where it passes over the pubis. Dr. Porcienko stood in front of the patient, grasping the limb in both his hands, in order to facilitate the separation of the head of the femur at the proper moment.

The operator now made a circular incision five inches below the hip joint, through the integuments, as in an ordinary amputation of the thigh. The second incision, through the muscles to the bone, was also made in the usual manner, after which the femoral, profunda, circumflex, and two large muscular arteries were tied so promptly, that the loss of blood was not greater than in ordinary amputation. A longitudinal incision was now carried from below the great trochanter to the circular incision, which penetrated to the capsule of the joint. The muscles inserted into the great and lesser trochanters were now divided, and Dr. Porcienko now endeavoured to dislocate the thigh, while the operator divided the capsule of the joint, internally, on the head of the femur, and the round ligament being then cut, the separation of the limb was completed. A portion of the capsule was left adherent to the brim of the cotyloid cavity, destined to cover that cavity as recommended by Walther. During the latter steps of the operation the hæmorrhage was so trifling that it was neglected. The operation occupied scarcely four minutes, and the patient experienced scarcely any debility.

The day succeeding the operation the wound was very painful; the abdomen and right hypochondrium were tense and intolerant of the slightest pressure—there was diarrhœa—the pulse small, contracted—headache intense—tongue dry—thirst extreme. These symptoms yielded on the 5th day. On the 8th day the dressings were removed, and a great portion of the wound seemed united by the first intention. The points where adhesion had not taken place yielded healthy pus.

The 9th day the patient complained of burning pain towards the sacrum, and the wound appearing too red was dressed with lead ointment. The patient's condition now improved so much, that on the 15th day a favourable issue was expected.

On the 17th day, without any appreciable cause, the face became swollen—the wound opened and was dry—the pulse became frequent and small, and the skin assumed a yellow tinge. It is remarkable that no local symptom preceded this change.

18th day.—The right hypochondrium became tense and extremely tender on pressure—respiration stertorous—speech difficult—extreme prostration.

20th day.—The patient died.

On examination after death, the lips of the wound were separated. The brim of the cotyloid cavity exhibited the appearance of commencing caries; all the ligatures were detached, and the arteries closed by firm coagula.

Abdomen.—The liver was enlarged, gorged with dark blood, and filled with small abscesses. The large veins, such as the ascending cava and left iliac vein, were filled with coagulable lymph, and their coats thickened. The sciatic and crural nerves were preternaturally red.

Thorax.—There was sero-purulent effusion into both pleuræ, and the pulmonary pleuræ were covered in points with a thick membrane. The lungs presented a black and red morbid appearance.

Cranium.—The membranes of the brain were congested, presenting a dark red appearance, and there was an unusual quantity of serum in the ventricles.

The amputated thigh was carefully dissected by Professor Bielkievicz, and afforded an admirable example of the diseased structure, termed by Dupuytren, neuroma. The disease had commenced in the medullary structure of the sciatic nerve—commenced at the level of the smaller trochanter, descended between the great adductor muscles and semi-membranosus, semitendinosus, and biceps muscles, which were expanded into broad membranes, covering the diseased mass whose inferior extremity lay between the solei and gastrocnemii muscles. The crural nerve lay on and was closely adherent to the anterior surface of the mass. The cutaneous veins, especially the internal saphena, were very much enlarged. The entire was enveloped by a dense cellular sheath, readily divisible into layers. The sciatic nerve increased in size as it approached the tumour; with the upper part of which it became confounded, so that its fibres could not be discerned. The tibial and peroneal nerves emanated from the inferior part of the tumour, the latter presented its natural appearance, the former was flattened, five lines in thickness, and for the extent of five inches below the tumour, was of a cribriform consistence, without a vestige of filamentous structure.

Dr. Porcienko concludes his memoir by stating, that he rejects amputation at the hip joint, in cases of organic disease, not from the dread of hæmorrhage, but because of the consecutive dangers. All the reported cases, he states, show the frequency of inflammation, and of purulent metastasis, which latter event is singularly favoured by the great number of veins communicating with the immense wound caused by the operation. The cotyloid cavity, also, often participates in the disease of the femur; or, if the disease be constitutional, it is reproduced elsewhere. For all these reasons he insists that the operation should be definitively abandoned in cases of organic disease; but admits that it may be a necessary and valuable resource in traumatic lesions, to which cases, in Dr. Porcienko's opinion, it should be confined —*Dublin Med. Press*, 30th Oct. 1839, from *l'Expérience*, 10th Oct. 1839, and the *Med. Chirurg. Trans. of the Imperial Academy of Wilna.*

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23. *Extraction of an Ovarian Cyst.*—An interesting case of this is recorded by Benjamin Phillips, Esq. in the *London Medical Gazette* for October last. The subject of it was a young woman 21 years of age, who had had tolerably good health up to the preceding Christmas when she experienced a heavy, but not

intense, pain in the right iliac region; gradually this subsided, and she then perceived a slight enlargement or tumefaction about the umbilical region; this continued gradually to increase, and was accompanied by some pain in the same region. In May the tumefaction so far increased as to have become apparent externally.

In August she applied to Mr. Phillips who satisfied himself that there had been no peritonitis, that there were probably no adhesions, that her distension was fast increasing, and that she was daily becoming less and less capable of getting about, that her health was beginning to suffer, and that she had then probably 15 or 16 pints of fluid in the cyst. He then stated to her the nature of the disease, that the only hope of getting rid of it was by having the tumour extracted through the muscles of the abdomen; he further related to her the results of the operation, and its dangers, and advised her to consider these things and if after doing so she still determined to have it performed that he would undertake it. She soon made up her mind. Two days before that fixed for the operation Mr. P. inquired into the state of the patient's bowels and was informed that they were confined, and that she was constantly obliged to take some rhubarb to induce a sufficient action. He therefore advised her to take a small dose the following morning so as to gently open the bowels. At ten o'clock the night before the operation Mr. Phillips saw the patient and asked her if her bowels had acted properly and was assured that they had. She was in good spirits and expressed a hope that the operation would not be delayed beyond the following morning.

Accordingly on Wednesday morning September 9th, Mr. Phillips performed the operation in the following manner: "The patient lay on a bed. The first incision commenced about an inch below the umbilicus, and extended rather more than an inch and a half. It was necessarry to give the cutaneous incision rather more extent than I at first proposed, because (strange to say, considering how great was the distension) there was three-quarters of an inch of fat upon the abdominal parietes. I dissected, carefully, until I came upon the sac: as soon as I had sufficiently exposed it, I seized it with the vulsella to prevent any difficulty of getting hold of it when emptied. It was then punctured with a trocar, and 330 ounces of a transparent, glairy, albuminous fluid was evacuated: the sac, which was extremely thick, was then drawn out through the opening, which it was necessary to enlarge slightly. The sac had no other attachment than its pedicle; the pedicle was, in fact, the Fallopian tube, to which it was firmly attached over more than an inch and a quarter. Around this tube a ligature was tightly drawn by Mr. Samwell; the ends were cut close, and the sac was detached without the slightest difficulty. Not an ounce of blood was lost during the whole operation; and when it is stated that her heart's action had not been accelerated to the extent of two pulsations during the operation, and that, at the conclusion, the pulse did not exceed 68, it must be evident that the suffering was not great. The external wound was accurately brought together with hare-lip needles, and there was no oozing of blood. From the moment of the operation there was severe pain in the right iliac fossa, which I referred to the strangulation of the tube by the ligature; there was also frequent sickness. To relieve this pain, in an hour after the operation an opiate enema was administered; it produced little relief, and in two hours afterwards a draught, containing thirty minims of the bimeconnate of morphia was exhibited: still the pain distressed her, and in two hours more a pill containing half a grain of the chloride of morphia was administered, and late in the evening another enema, containing forty-five drops of the liquor opii sedat., was thrown up, and a draught, containing tinct. digital. ♏x., acidi hydrocyanic. ♏ij., morphiæ chlor. gr. 1-3d, ordered to be taken every four hours. During the evening, when vomiting supervened, there was an oozing of blood from the wound, but to no great extent. It was not easy to account for it, because no vessel was wounded during the operation. The only point upon which suspicion lay was the ligature around the Fallopian tube; but as there was no evidence of blood being poured out into the abdominal cavity, the suspicion seemed vague.

"Evening, 12 o'clock.—The pain was still considerable, but mainly referred to the right iliac region; the general tenderness was slight; the sickness occasional. The pulse had materially increased in frequency, and the skin was hotter: believing that there was reason to apprehend local peritonitis, I ordered ℞. Hydr. Submur. gr. iij.; Opii, gr. ss. 2ndis horis. Enema Tereb. statim. Hirudines xx. abdom.

"Thursday morning, 8 o'clock.—Pain in iliac region relieved by leeches, but complains of pain in the umbilical region; tenderness on pressure considerable; no tympanitis; nausea still continues; countenance *very* good, pulse 94; heat of skin moderate; bowels not opened. Ordered to intermit Calomel and Opium; to rub in Ung. Hydrarg. ʒj. 3tiis horis; to apply 12 leeches to the umbilical region.

"12 o'clock.—Bowels still confined. Ordered Extr. Col. Comp. gr. ij.; Capsici, gr. ss. omni hora; 12 leeches to epigastrium, where she complained of tenderness.

"7 o'clock.—Pain much abated; pulse 100; bowels still confined. Ordered Mag. Sulph. ʒj.; Acid. Hydrocyanic. ♏ij.; Tinct. Digital. ♏xij.; Inf. Rhœad. Comp. ℥ss.; omni hora.

"Friday, 8 A. M.—Bowels acted *well*, three times, during the night; nausea lessened; pain much relieved; countenance good; pulse 96; abdomen soft.

"2 o'clock.—Can bear pressure; has just had a liquid stool.

"8 o'clock, P. M.—Has had four liquid stools; countenance good; complains of pain—probably, from its moving about, tormina; however, I thought it safer to order—12 leeches; Opiate Suppository; Pulv. Aromat; P. Kino Comp. āā. gr. v. 10 P. M.—Morphiæ Chlor. gr. i.

"Saturday morning, 8 o'clock.—Slept from 10 till 3, when she awoke; more liquid stools; was seen by the resident physician, Dr. Boyd, who ordered an opiate enema, and Pulv. Arom. and Pulv. Kino, āā. gr. v.: has scarcely any tenderness; abdomen soft. Cholera-like symptoms persist 12 A. M., when she was ordered to take Cupri Sulphat. gr. 1-3d, omni hora: this was rejected, and Plumbi Superacet. gr. iij. Ex Paparv. gr. ij. substituted. These were not rejected, but they did not lessen the stools, which were like rice water, and incessant. Through the whole of Saturday these symptoms continued, without peritoneal tenderness, or any approach to a peritoneal countenance, but with incessant vomiting, the extremities becoming blue, but with the mind intact; they persisted, without remission, until five o'clock on Sunday afternoon when she died.

"She was examined on Monday (at 2 o'clock) in presence of Drs. Clendinning, Harrison, Lee, and others: the abdomen was soft and flat; the incised point was nearly healed. When the cavity was exposed, a diffused injection was apparent, but, with the exception of some small patches of lymph, none of the ordinary products of peritonitis existed. In the cavity from six to eight ounces of blood was found; it contained a few coagula, but it was dark in colour. Upon examining the Fallopian tube the ligature was found in its place; but it was evident that, from its hypertrophied condition, it resisted the necessary constriction, (although Mr. Samwell had used much force,) and the extravasation was a consequence of oozing from the extremity of the tube. That oozing, however, had long ceased; for nature had blocked up the vessels. The opposite ovary was not healthy. Upon laying open the large intestines we found them covered with an exudation such as is found in croup—a false membrane: when this was torn off with a forceps, the membrane presented what the French pathologists term an *erosion*, which was, no doubt, the commencement of extensive ulceration, and which was clearly of some standing.

"When the dejections became frequent, the mother of the patient informed me that her bowels were "very delicate;" that she had forgotten to say any thing about the rhubarb on the morning of Tuesday; that she recollected it in the afternoon, when her daughter came in; that the daughter said, "It is lucky, mother, that you did forget it, for I have been twenty times to-day; but do not say any thing to Mr. Phillips about it, or he will put off the operation."

The failure in the present case Mr. Phillips conceives did not result from any vice in the operation, but from the state of the patient's bowels, and he thinks had this complication not supervened that there is great reason to believe the operation would have succeeded. "Up to the moment" he remarks "when that cholera-form affection was developed, 56 hours after the operation, the prospect was most cheering; the abdominal tenderness was greatly abated, the pulse had been reduced to 92, and those who had at first no confidence in the operation, now became sanguine of a successful result. The dangers of the operation, which I had anticipated, were difficulty of getting at or extracting the cyst, the shock of the operation, and peritonitis. In the present case no difficulty was experienced as regards the first two points; and I am fully justified in saying, that the degree of peritonitis was by no means incompatible with recovery. Acute pain followed immediately upon the operation, and continued for many hours: for some time it was a good deal confined to the right iliac fossa, the seat of the ligature, and I was disposed to refer it to the constriction of the ligature; but I am now inclined to think that it was not produced by that, but was excited by the blood which exuded from the cut surface of the tube: it was at first developed at that point, but as the blood was spread over a larger surface of the peritoneum, the pain was also spread farther. I say I am disposed to adopt this conclusion, though I may have no sufficiently satisfactory proof that blood in contact with the peritoneum will at once excite severe pain. I have only two cases to adduce in proof of such an effect:—one was an aneurismal tumour, which had burst into the cavity of the peritoneum; the pain was immediately dreadfully intense: in the other case, the spleen was ruptured by a fall: immediate agonising pain was developed all over the abdomen: about six ounces of blood were found in the peritoneal cavity. In opposition to this opinion, I know that Mr. Gulliver has injected blood into the abdominal cavity, without exciting inflammation, or apparently pain. In our case the ligature had excited no peritonitis; the blood had, but it was not intense, though diffused; the early and energetic treatment employed had prevented its further development, had induced it to enter upon a retrograde course: this, I submit, is proved by the great abatement of pain, the lesser frequency of the pulse, the relief of the sickness, the absence of tympanitis, the ability to lie perfectly straight without inconvenience, the character of the face, and the occurrence of three good stools. The blood had ceased to ooze; the inflammation produced by that which was extravasated was fast abating, and the ligature had not proved itself apt to excite peritoneal inflammation at all. I say, then, that so far as the operation is concerned, it afforded, in the present case, a fair and probable cause to believe that it would have succeeded, if we had not had to contend with the supervening affection.

"My confidence in the operation, when there is reason to believe that there are no adhesions, and that the patient's health is satisfactory, is greater than when I undertook it in the present case; and when we take into account the results of medicine, of tapping, or of the disease left to itself, I think no one can doubt that an operation which, under adverse circumstances, has succeeded nine times out of twelve cases, ought to be resorted to, before complications or counter-indications are developed. We do not hesitate to have recourse to the ligature of large arteries, and to regard it as a justifiable operation, though the results are much less favourable; we do not object to perform amputation of the thigh, although nearly two out of five die; and why should we regard an operation exhibiting such a result as is presented by the operation of extraction of an ovarian cyst with disfavour? Simply because it looks formidable, and because it is new. But it may be said the difficulties are frequent, adhesions almost always occur, and they must materially lessen the chances of success. I know Dr. Seymour has stated that these adhesions exist in 99 cases out of every 100. I am by no means prepared to contradict the correctness of this assertion, because my opportunities of examining these sacs after death amount only to nine cases: in several of these the patient had been tapped, but in not one of them did the cyst adhere, except by its peduncle, whose extent was variable, though never great. In twelve instances the results of the operation of extraction are recorded; of these there were adhesions in four cases, and in two of them the patient had been tapped; but in neither of those cases did the adhesions constitute a serious obstacle to the removal of the cyst. It may be said that another difficulty may be experienced, by the presence of more than one cyst, and the occurrence of a considerable quantity of solid matter. That more than one cyst may exist in the same tumour at the same time cannot be denied; but although it may be, it rarely is presented; and there can be no difficulty in introducing the trocar into the second cyst, if it be found to constitute an obstacle to extraction. As to the coexistence of a large cyst and a solid tumour, I do not deny that it may happen, but I do maintain it to be a rare exception; and if that rare and exceptional case is presented, the practitioner should be prepared to meet it. In my apprehension the occurrence of peritonitis is the danger; but that is a danger which we do not regard in the same light in other cases. The opening into the abdomen is not much larger than that which is made in cases of hernia. But it may be said peritonitis very commonly follows that operation. In my opinion it more frequently precedes it; the symptoms commonly presented warrant me in coming to that conclusion. But recollect, in the one case we have at the time of operation (for we can choose our time) a comparatively healthy abdominal cavity; in the other we have a greatly injured intestine, and a probably inflamed peritoneum."

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24. *Exploration with an Acupuncture Needle as a means of Diagnosis.*—Dr. Home, assistant surgeon to the forces, relates in the *Edinburgh Medical and Surgical Journal* (July 1840) a case of gun-shot wound, in which he made a novel application of the acupuncture needle, and one from which we conceive the surgeon may derive much aid in forming a diagnosis in certain instances.

A marine, at the encounter in 1838, at Wind-Mill Point, was struck by a ball about two inches and a half above the external malleolus of the left leg. He continued firing for some time, and afterwards walked to the town of Prescott, a distance of a mile and a half. Immediately on his arrival there it was dressed; and, on being examined by the probe, its course was found to run under the *tendo Achillis;* but there being but one wound, and no ball being felt, it was supposed that it had come out during the exertion of walking from the field. Four weeks after, when Dr. H. saw him, the wound was nearly healed, and no sinus existed; but he continued to complain of an impediment in the motion of the muscles of the calf, and, as he himself expressed it, of a sensation of a want of the usual spring in the foot. On careful examination, a deep-seated induration was felt beneath the *tendo Achillis*, which his surgeon attributed either to a deposit of lymph in the course taken by the ball, or to a diseased action set up in the tendon at the point of injury. I felt more disposed to believe that it was really the ball itself, which, from its deep situation, and probably surrounding infiltration of lymph, communicated the sensation of being larger and less firm and resisting than it otherwise would have done.

The tumour, when firmly pressed upon, however, was not in the least degree painful, which seemed to authorize some doubts as to its being really the ball, it not seeming very probable that a foreign body of such recent introduction could have caused so little irritation as not even to excite uneasiness when roughly handled.

It occurred to Dr. H. that the question might be at once decided by exploration with an acupuncture needle: accordingly he slowly introduced one, with little or no pain, in the direction of the tumour, which it had no sooner reached than the characteristic sensation of the contact of two metallic bodies was elicited. A deep incision was then made; and the ball removed, and the patient was soon able to return to duty.

Had this course been at once adopted, the patient might have been rendered fit for duty many weeks earlier; and had it not been adopted when it was, he would in all probability have been invalided, under the supposition that he was afflicted with irremediable lameness.

25. ***Alum and Cubebs in Gonorrhœa.***—Dr. **Mathieu**, in a paper inserted in the Number of the *Journ. des Connaiss. Méd. Chirurg.* for June, 1840, extols the efficacy of the following mixture, employed by M. Ricord, in gonorrhœa:—℞. Pip. cubebæ ℥ij; Alum sulph. ʒss.—M. Div. in chart No. IX. One to be taken three times a day. Dr. Frederic, of Leipsic, it will be remembered, bears testimony also to the efficacy of this remedy. See this Journal for Nov. 1839, p. 210.

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26. *Osseous Union of a Fracture of the Neck of the Thigh Bone within the Capsule.* By **Walter Jones**, Esq.—The patient in this case, who was more than 80 years of age, was first seen by Mr. Cole, the house-surgeon of the Stafford Infirmary, on the day succeeding that in which the neck of the thigh bone had been fractured by a fall. Mr. Cole applied a splint to the outside of the limb, extending from the pelvis to the foot, and bound the legs together, the apparatus being completed by a bandage round the pelvis. The patient suffered so much pain, aggravated by a troublesome cough, that Mr. C. removed the splint and bandages. After having allayed the pain and quieted the cough, however, by the aid of laudanum, Mr. Cole re-applied the bandages, and retained them in their position six or eight weeks, when the patient was allowed to get up. During the following spring and summer, he was able to go about with the assistance of a stick; but, becoming the subject of chronic catarrh, he died about a year and a half after the injury had been sustained. The capsule was found much thickened; and it became necessary to divide the shaft of the bone before the knife could be passed round the joint; so near had the trochanter approached to the acetabulum. The direction of the fracture could not be traced, or the bond of union made out, until the bone had been macerated. As the portions of capsule became loose, they were removed with the forceps, "which enabled me," says the author, "to discover, what I believe to be the case, that the fracture was within the capsule." The bone sawn through, and a very accurate drawing of one of its sections, were shown to the meeting.

Mr. **Bransby Cooper** looked at the preparation which was contained in a bottle, and expressed his conviction that the union existing between the divided portion of bone was not osseous. But granting in this case that the union was by bone, such a circumstance would militate nothing against the often-expressed opinion, that fracture within the capsule of the neck of the thigh bone never did unite by osseous deposit, for, in this instance, the neck had become absorbed, and the head of the bone had fallen down upon the shaft. The union that had taken place had resulted from a deposition from the shaft of the bone, and not from its neck; but he denied that union, except that resulting from the attraction of cohesion, did exist at all. He did not deny that under certain circumstances osseous union of the neck of the femur within the capsule could take place; but for this to be effected it was necessary that the periosteum should be entire, for the purpose of depositing provisional callus, and that the limb should be allowed to remain for a long time in an undisturbed position, with the extremities of the fractured portion in contact. Thirteen or fourteen months would at least be required to arrive at so desirable a conclusion. All the articulating surfaces were subject to the same laws, and the same difficulties were experienced, if attempts were made to produce an osseous union where they had been fractured. The reason for this was obvious, it was a law of nature, and not accidental; the vessels supplying these parts had a particular duty to perform, that of affording a supply of the synovial fluid, and, therefore, could not be devoted to the formation of callus. The same difficulties in union of fractures of flat bones was experienced, because the vessels of the neighbourhood had to supply important organs, the functions of which would be interfered with, provided their vascular supply was devoted to a reparative process. He contended then that Sir A. Cooper was right in asserting that union of fracture of the neck of the femur by bone was the exception to the general rule. He had been to see all the cases which had been announced as those of union by deposition of bone, and he had generally found that the fractures had occurred in old people, and the bones on both sides were the same, the necks of the thigh bones having become absorbed.

Sir B. Brodie, having had the preparation taken from the bottle and handed to him, gave it as his opinion that the union was osseous, and not of such a kind as would have been presented, had the deposit, according to Mr. Cooper, taken place from the shaft of the bone and the trochanter. The shortening process consequent upon old age, had doubtlessly been going on to a considerable extent, and this probably both before and after the receipt of the accident. He believed that it was not doubted that union of the neck of the thigh bone within the capsule did take place in certain cases, but of course it was by a different process from that which was obtained, in fractures of the shafts of bones. Some years ago he had made some experiments on the mode in which fractured bones united, and he had come to the same conclusion as Dupuytren, without having been aware that he had been pursuing the same inquiry. The result of these experiments had satisfied him that union at first depended more upon the neighbouring cellular tissue than upon the periosteum, whatever part the latter might afterwards play in the process. He might take this opportunity of remarking, that he had found the most successful plan of treating ununited fracture, to be that pursued by Mr. Amesbury, and consisting in the binding of the limb in an immovable apparatus, by which the extremities of the fractured bone were kept in a state of forcible apposition for a long period. The plan was very a painful, but a very successful one. He had succeeded in procuring union, by this mode of proceeding, in one case, in which the fracture had been ununited for two or three years, and a seton had been passed through it without benefit, the arm remaining dangling and useless. In the experiments he had alluded to, only one case of union by ligament occurred, and this was in a fracture of the femur of a rabbit. He had endeavoured to account for this deviation from the general rule, but had not succeeded. He had also instituted some experiments with the view of preventing union, but had not been successful in his efforts. It was true that he had found that by placing a ligature on the femoral artery, the reparative process in a fracture of the thigh bone had been delayed in its commencement for a week or a fortnight, but at the expiration of that time union went on as though no such operation had been performed.—*Lancet*, December 5, 1840.

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27. *Effect of Tying the Femoral Artery on the Union of Fracture of the Thigh Bone.*—The following curious case is related by Mr. B. Cooper. A man was admitted into Guy's Hospital with compound fracture of the femur; there was so much tension of and injury to the soft parts, that it was thought unadvisable to put the limb in splints. During the night spasm came on, and the femoral artery was lacerated by a portion of the splintered bone coming in contact with it. A ligature was placed upon the vessel, and the fracture united so quickly, that Mr. Key remarked of the case, that the quickest way of producing union of fracture of the femur, appeared to be by tying the femoral artery.—*Ibid.*

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28. *On the practice of placing the finger over the orifice of the vein, for temporarily suspending the blood-letting, or of closing the vein.*—The distinguished editor of the *Edinburgh Medical and Surgical Journal* reprobates, (No. for Jan. 1841,) in very strong terms this practice, as filthy, dangerous, and unnecessary. He says—"1. It is filthy, because it applies to the lips of the wounded vein the secretions of another person; for there is no finger, be it ever so well washed, that is not covered with perspirable matter, which, when applied to the edges of the wound in the vein, acts as a poison.

2. The practice is very dangerous. The great majority of instances of inflamed vein are produced by this foul and pernicious practice of placing the finger over the orifice of the vein. Authors have perplexed themselves to explain the origin of this dreadful and unmanageable accident, and have ascribed it alternately, to a foul or rusty lancet, to a blunt lancet, to washing the wound with sponges, to dressing it with unclean linen or charpee, and to several other pieces

of practice unnatural, unnecessary, or ofttimes dirty. But they seem not to be aware, that the accident most frequently follows this mode either of temporarily suspending the blood-letting, or of closing the vein. We have seen a considerable number of accidents of this kind; and it has always been observed or turned out on inquiry, that the finger was applied once or twice over the wound in the vein. We have, both personally in performing blood-letting, observed the rule of never applying the finger over the wound, and in instructing others in its performance we have enjoined the observance of the same rule; and in no instance has it been known that *phlebitis* has followed blood-letting when performed and completed with attention to the rule now specified. Wherever, on the other hand, the practice of placing the finger over the wound becomes general, instances of phlebitis are also common.

We know that it is the custom of many surgical teachers to recommend the practice, and hence it is so frequent. But with this we have nothing to do. The numbers that recommend a piece of bad practice will never make it good, especially in oppositian to manifest physiological and pathological facts. If it be argued that, amidst the general use of this method, the cases of phlebitis are not equally general, we reply, that in a certain number of cases, though the finger is placed over the wound, it does not touch the lips of the vein, but only the wound in the skin, and the adipose tissue. But wherever the finger is applied to the lips of the wound in the vein, inflammation will assuredly follow.

The same is true of venous inflammation after amputation and other wounds. What is the cause of the mortality after amputation and other operations in the hospitals of Paris? Chiefly, we believe, the groping, poking, and rubbing with fingers and charpee over the stump in repressing venous hæmorrhage. The surgeons seldom dress the stump, and much more rarely tie the arteries themselves; and as the whole business of securing blood-vessels and dressing after the limb is lopped off is left to pupils, the rough usage is often very great.

3. This rule of placing the finger over the orifice in the vein is totally unnecessary. Any one who understands the circulation, knows that if he wishes to suspend the bleeding from a vein, it may be most effectually done by placing the finger over the vein below the wound; and if he wishes to stop it altogether, he does so most effectually by untying the bandage, and placing the arm and fingers at complete rest, when, after the escape of the little blood left between the wound and the nearest valve, the bleeding ceases entirely. If it proceed, the gentlest pressure over the vein below the wound is quite sufficient to arrest it.

It is not unreasonable to observe, that this practice of placing the finger over the wound in a vein was much favoured by the army surgeons who returned from the peninsula in 1814 and 1816. They had learned that, in arresting the flow of blood from wounded vessels, especially arteries, the first thing to be done was to place the finger immediately over the bleeding orifice; and this rule they accordingly inculcated on all their friends, who in their turn taught it to their pupils, as a rule sanctioned by experience. And a good rule it is as to arteries, but as to veins decidedly bad. So important is it to attend to little and apparently trifling peculiarities. We believe that, to the rule thus heedlessly and wantonly taught and inculcated upon pupils, many lives have been sacrificed. We cannot allow the direction to pass through the pages of this journal without lifting up a strong, unqualified, and decided testimony against it; and saying to all and sundry who would practise venesection without danger to their patients and without remorse to their own minds—Pray avoid it."

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29. *Treatment of Varices of the Lower Extremities, and of Varicocele, by subcutaneous ligature of the veins.*—M. Ricord has described in the *Bulletin de Thérapeutique*, the process employed by him to obtain the obliteration of varicose veins. In order to cure a varicocele this surgeon begins by shaving the genitals, then he encourages turgescence of the veins, either by causing the patient to walk, or by covering the scrotum with a warm poultice. This done, he carefully isolates the vas deferens from the venous plexus, seizes this plexus in a

fold of the skin of the scrotum, and passes above the vessels a flat lancet-shaped needle, armed with a double thread terminating in a loop. The needle having completely traversed the skin from one side to the other, he lets go the veins, retaining only the skin, and then transmits a second needle, similarly armed, above the veins, entering it by the hole of exit, and bringing it out by the hole of entrance. The venous plexus is thus fixed between two double threads, one above and the other below. The double ends of the threads of each side are next passed through the corresponding loops of the other threads and being drawn in opposite directions firmly tie the vessels under the skin.

Constriction is effected in this operation by means of a particular *serre-noeud*, consisting of a canula, curved like a horse-shoe, and flattened in the middle, to which is fixed a button furnished with a ratchet wheel, which makes it a sort of small tourniquet. The ends of the ligatures are passed into the extremities of this canula and wound upon the button to which they are fastened, so that in turning the former they are stretched on the canula like the string of a bow. The constriction can be increased every two or three days, and usually from the tenth to the twentieth day the vessels are cut through.

M. Ricord has already applied his operation upon twelve patients—affected with varicocele, and in all he has obtained the most satisfactory results. The same method was employed upon nine patients labouring under varices in the legs, some of whom had simple varices, and others varicose ulcers besides. From one to four ligatures were employed in these cases; no bad symptoms supervened, and perfect recovery ensued in every instance.

The treatment of varices and varicocele by ligature of the veins has attracted much attention of late years; and numerous more or less ingenious processes have been tried with a view to accomplish the obliteration of the vessels with the least possible exposure of the patient to the terrible consequences of phlebitis after processes. We believe that none of these secures the patient from the symptoms always to be apprehended when a vein of a certain calibre, and above all an inflamed vein, is divided; and the zeal and ardour of surgeons have been greatly depressed by the fact, that time, which alone can determine the efficacy of their plans, has demonstrated that the cures accomplished were nearly always illusory, and that six months or a year after an operation in appearance completely successful, the varices began to be developed anew, just as if no vein had been tied; so that the patient had been subjected without advantage to the risks of phlebitis, the serious nature of which no one can be ignorant of. Some time having elapsed since a number of patients have been treated for varices by the ligature, the relapses can be shown to be so frequent that we ought perhaps to renounce the operation. It is then to prevent the relapses, and not to modify the ligature, that surgeons should apply themselves, for it is proved that the plans of MM. Breschet, Davat, Velpeau, &c. are easy of execution; this is undoubtedly the case with that of M. Ricord: but of what value is a mode of treatment which at the end of a year leaves the patient with his infirmity.—*Journ. de Méd. et de Chirurg. Pratique.* May, 1840.

30. *Wound of the Urinary Bladder.*—By Dr. Schütte, of Mulheim.—A healthy man, thirty-seven years of age, fell perpendicularly from a height of about eight feet, on an upright wooden stake several feet long and fully an inch thick. Its end passed into the inner surface of the left thigh, about three inches from the rectum, and ran into the lower part of the urinary bladder above the sphincter vesicæ. The urine flowed continually and insensibly through the wound; but neither blood nor urine passed through the urethra. A catheter was placed in the urethra, and several leeches and lotions of cold water were applied externally; and when the danger of severe inflammation had passed by, bread and water poultices were put over the wound. The patient was allowed only mild food, and in about three weeks the wound had healed without any ill consequences.—*B. and F. Med. Rev.* from *Med. Zeitung*, 7 Oct. 1840.

31. *Spontaneous fracture of a Calculus.*—M. Leroy d'Etiolles presented to the Academy of Sciences of France, at the meeting of the 22d June, 1840, an example of spontaneous fracture of a calculus in the human body, and he stated that it was the fourth instance of it which he had met with.—*Journ. des Connaiss. Med. Chirurg.* Aug. 1840.

32. *Case of Enormous Empyema successfully treated by Operation.* By Dr. Heyser.—A man, 22 years of age, was suddenly seized in the month of March, 1839, with pain in his right side, for which he was bled and blistered, and had other appropriate treatment. His breathing, however, becoming more laborious, he entered the hospital on the 28th of April, when he presented the following symptoms:—His respiration was very laborious; he spoke with difficulty and pain; he had frequent troublesome cough, with copious expectoration; had much anxiety; his face was livid; his pulse was small and very quick; the secretion of urine was almost stopped, but his bowels were pretty regular; he complained of feverishness and unquenchable thirst. The right side of the chest was an inch and a half greater in circumference than the left, and gave a dull sound on percussion, and the respiratory sound there was inaudible. The right side of the chest was not elevated during inspiration, and there was considerable œdematous swelling all over that side. Whenever he attempted to lie on the left side he was threatened with suffocation.

On the 30th April, Dr. Heyser, in presence of his colleagues, made an incision between the seventh and eighth ribs of the right side, when there escaped about twenty-two pounds Troy weight of inodorous purulent matter. The patient felt much relieved by the operation, and slept for a space of four hours after it. The wound was kept open by the insertion of a piece of oiled rag between its lips. Calomel and digitalis with decoction of quinine were administered internally.

The morning after the operation, between eight and nine ounces of purulent matter escaped from the wound, and for several days the patient continued in a very satisfactory state. After some time, however, the discharge became more abundant, and somewhat fetid, and at each dressing, which was repeated morning and evening, there escaped from five to eight ounces of fluid.

By the 3d of June the quantity of matter which escaped at each dressing had diminished to four drachms and presented the characters of healthy purulent matter; he breathed freely, and had improved much in his general health. The lips of the wound were therefore allowed to come into contact, and speedily united. The right side of the chest, which before the evacuation of the liquid was an inch and a half greater in circumference than the left, was now nearly one inch less than the left. He could lie easily on both sides; his cough was almost gone; his respiration normal; a dull sound was elicited by percussion over the lower third of the chest, but sonorous elsewhere; the respiratory murmur, although still feeble, was distinct over the upper half of the chest. His pulse and general health were good, and at his own request he was allowed to leave the hospital on the 9th of June.

He returned on the 16th of the same month, his uneasy symptoms having partially recurred; and upon opening the wound, and introducing a gum-elastic tube, about eight ounces of thin purulent matter escaped. Slight feverish symptoms followed, and the respiration was somewhat impeded. Sulphate of quinine and digitalis were again ordered, and, under the influence of these, the discharge of matter diminished, and the wound closed on the 14th of July. The other symptoms completely disappeared; and all the functions returned to their normal state. The dull sound on percussion, and absence of respiratory murmur at the lower part of the right lung still remained. He was dismissed on the 17th of July, and by the end of August was able to enter the military service. *Ed. Med. and Surg. Journ.* from *Casper's Wochenschrift fur die Gesammte Heilkunde*, July, 1840.

33. *Cure of Fissures of the Anus by Rhatany-root.* By Professor TROUSSEAU.—M. BRETONNEAU appears to have been the first who recommended the rhatany-root for the cure of fissures of the anus. He was led to try its effect in this complaint from remarking, that constipation is in most cases the cause of the fissures, and the great obstacle to their cure. That this constipation is in a great majority of cases attended with a dilatation of that portion of the rectum immediately beyond the sphincter, which forms thus a place of lodgment for the feculent matters, which sometimes amass there to such an extent, as, when expelled, to cause pains equal in severity to those of delivery. To correct this morbid state of the gut, whether it was accompanied with fissures or not, and restore it to its original tonicity, was the object which M. Bretonneau had in view in employing the rhatany-root. In several cases, then, of this state of the gut, attended with fissures of the anus, he found, that he effected a cure both of the constipation and the fissures, by administering in glyster the extract of rhatany-root, with the addition of a small quantity of the alcoholic tincture of the same.

Since the period when this mode of treatment was first made known, M. Trousseau has cured four cases, M. Marjolin one, and M. Berard, junior, two.

The mode in which M. Trousseau employs the rhatany-root is the following. He administers to his patient every morning a glyster of marsh mallows decoction, or simply of water, with the addition of olive or almond oil, in order to clear out the intestines. Half an hour after the intestine has been emptied, he gives an injection composed of thirty-eight drachms of water; one to two drachms and a half of the extract of rhatany; and five drachms and a half of alcohol, which the patient is desired to retain, if possible. The same styptic injection is repeated in the evening.

When the pain is once moderated, only one glyster is given daily; and when the cure appears to be completed, every alternate day only, for a fortnight longer.

He says he has derived considerable advantage from the employment of an ointment composed of one or two parts of the extract of rhatany to five of the butter of cacao.—*Ibid.* from *Gaz. Méd. de Paris*, 5th Sept. 1840.

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34. *Subcutaneous Section of forty-two Muscles, Tendons, or Ligaments, practised the same day, on the same person, to remedy a general articular deformity.* By M. JULES GUERIN.—In a letter addressed to the Academy of Sciences on the 31st of August, 1840, M. Guérin states that on the 25th of that month he performed the section of forty-two tendons, muscles, or ligaments, to remedy a series of articular deformities of the trunk and limbs, caused by the active retraction of these muscles and ligaments. There were twenty-eight openings of the skin required. The following were the parts divided:

Trunk	Pectoralis major	1
The arms	On each side biceps cubiti	2
	„ pronator teres	2
	„ extensor carpi radialis	2
	„ flexor communis sublimis	2
	„ palmaris brevis	2
The forearms	Tendons of extensor carpi ulnaris on each side	2
	„ palmaris longus and brevis	4
	„ abductor pollicis	2
The legs	The sartorius on each side	2
	The biceps cruris	2
	The semi-membranosus	2
	The semi-tendinosus	2
	The rectus femoris	2
	Fascia lata	1
	External lateral ligaments of knee	2

The feet	The tendo Achillis on each side	2
	The tibialis anticus	2
	The extensor communis	2
	The extensor proprius pollicis	2
	The peronei antici	2
		42

The patient only experienced moderate pain or fatigue, and did not complain during the operations, which lasted an hour. An hour afterwards he was in a sound sleep. He was very tranquil the following night and day. No inflammatory accident supervened, and on the third day, the twenty-eight wounds were completely cicatrized. The sections were made in the presence of many distinguished French and foreign surgeons. M. Guérin holds that he is not open to the charge of rashness, as he first established the absolute innocuousness of subcutaneous wounds by numerous experiments on animals, and then verified the same principle in man by a series of operations from the section of one muscle to that of a great number. He purposes to lay an account of his method of operating with its definite results before the academy in a future memoir. —*British and Foreign Med. Rev.* from *Gaz. Méd. de Paris*, Sept. 5, 1840.

35. *Solution and Absorption of Provisional Callus during Typhus Fever.* By Dr. Schilling.—An artilleryman received a fracture of the left femur on the 1st of September, and by careful management the ends of the bone were so firmly united in the middle of November, that he could bear some weight on the foot. Symptoms of typhus abdominalis, however, then set in, and ten days afterwards callus could no longer be felt, and the bones moved as freely and as easily upon one another as at the first examination after the reception of the injury. In six days more the patient died. The examination exhibited no trace of callus; the broken surfaces were bloody, like those in a recent fracture, and were surrounded by a sac-like membrane, which contained some black bloody fluid.—*Brit. and For. Med. Review*, from *Medicinische Zeitung*, September 16, 1840.

36. *On the Employment of large Doses of Tartarised Antimony in the Treatment of Articular Dropsies.*—M. Gimelle, who some time ago published a series of facts, illustrative of the utility of tartar emetic in hydarthrosis, has continued his observations, and finds that when an articulation is the seat of synovial effusion, the same treatment is the most effectual for procuring speedy resorption. In twenty-eight cases the emetic tartar was given in increasing doses, commencing with four grains in the twenty-four hours, and increasing two grains daily till the dose was sixteen, eighteen, or twenty grains per diem, with the invariable effect of determining the resorption of the liquid in a space of time, varying from eight to sixteen days. Of twenty-eight cases of effusion of synovia into articulations, twenty-two had their seat in the knee-joint; three were double, and two were in the shoulder-joint; one was in the elbow, and one in the ancle. All the patients took the emetic tartar in infusion of linden tree with syrup of poppies. In eighteen the tolerance was established on the first day, in two on the second, and in two on the third. No accident occurred to any of the patients after the tolerance was established. The dose of twenty grains was never exceeded, and in all the cases the effusion was absorbed in the space of eight, ten, or sixteen days—longest period during which the remedy was administered. In twenty-five cases the pain and stiffness felt in the affected articulations diminished at the same time and degree with the effusion, and when the latter had disappeared, the patients could walk as easily as before they were attacked by the disease. In two cases, however, though the liquid disappeared in the ordinary time, the pain remained in one case for a month and in the other for forty days. In one case the remedy was carried to twelve grains without benefit, and as it was one of very old standing, it was thought proper to relinquish the medicine.

We give the following cases, as they are very interesting proofs of the value of the treatment employed.

CASE I. A man, aged seventy-three, was affected by a very large hydarthrosis of the left knee, which extended into the hollow of the ham, where it formed a tumour of the size of the fist, which disappeared on strong pressure, and became visible on each side of the patella. M. Pasquier prescribed the emetic after the form of M. Gimelle. The dose was successively carried to 16 grains; the patient experienced no inconvenience, his appetite continued good, and on the sixteenth day all the signs of effusion into the articulation had disappeared. Two days afterwards the patient was dismissed entirely cured.

CASE II. On the 10th of September, M. Gimelle was called to a student, aged twenty-one years, with an hydarthrosis of the right knee, which had been treated without success during six weeks by leeches, blisters, compression, frictions, and embrocations. M. Gimelle prescribed the tartar emetic. The patient's appetite continued good, and he had no inconvenience. The does of twelve grains was not exceeded, and fourteen days after this treatment was commenced there was no trace of synovial effusion, the patient feeling merely a feebleness of the limb.

CASE III. A healthy female, aged twenty-three, in a journey from Tours to Paris, caught cold during the night, and, on her arrival in the capital, experienced pains in the right knee. M. Gimelle considered this case one of commencing hydarthrosis, and prescribed without delay a gummy potion with four grains of tartar emetic and an ounce of syrup of poppies. Five or six vomitings, and afterwards alvine dejections followed, but the pain was relieved in the night and the patient could move the limb. On the second day the catamenia appeared and the emetic was suspended for five days, during which the pain reappeared and the effusion increased, and the articulation became very red and hot. The emetic was then resumed, four grains being given on the first and second day; it produced three or four vomitings, and as many stools. Tolerance was established on the second day, there was a diminution of the synovial tension, and the patient could bear slight movements of the limb without much pain. On the third day six grains were given, eight on the fourth, ten on the fifth, twelve on the sixth, and fourteen on the seventh; the tolerance continued, and the amelioration was progressive. On the eighth, ninth, and tenth days, sixteen grains were given, and on the tenth day the synovial effusion had completely disappeared.

In none of these cases did M. Gimelle precede the employment of the tartar emetic by local or general bloodletting. Nevertheless, he thinks that if the fever be intense, and the articulation present great heat and redness, or if there be great irritation of the digestive organs, it would be proper to combat these symptoms before administering the emetic tartar. By this preliminary treatment we should diminish the chances of gastric irritation, probably facilitate the tolerance, and consequently the action of the remedy.

The most constant effects of the tartar emetic were diminution in the force and rapidity of the pulse, enfeebling of the voice, fatigue and coloration of the eyelids (known by the name of *yeux cèrnes*,) and abundant perspirations during the night. Five patients had vomitings, two during one day, one two days, and two during three days. Eight had very abundant alvine dejections, lasting from one to three days: in three the vomiting and purging coexisted. Sixteen experienced neither vomiting nor purging. In the majority the appetite was unaltered; and in those cases where it was disturbed, it was re-established with the tolerance. The quantity of urine was diminished, which M. Gimelle attributed to the abundant perspirations. All the other functions were performed as in the healthy state. The quantity of food the patients had taken when in health was not diminished, and often increased. Lastly, M. Gimelle saw all the patients some months after treatment, and many of them after some years, and in none did any accident occur.—*Brit. and For. Med. Review* from *Bulletin Général de Thérapeutique*, July 1840.

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37. *Looseness of the Teeth.* By Dr. GRAVES.—Among the various causes which produce looseness of one or several teeth, none is more common than inflamma-

tion of the alveolar processes and sockets. Sometimes this originates in disease of the tooth itself, or of the gums; but in other instances, the diseased process commences in the alveolar periosteum, and by spreading to the sockets and gums, it gives rise to great pain, swelling, and sponginess of the latter, while it eventually detaches the fangs of the teeth implicated in the attack, from the grasp of the sockets, and thus at last the teeth fall out, though in themselves they exhibit no appearance of decay.

The progress of the disease is accompanied by extreme pain, and as a puriform discharge oozes out from between the gums and the inflamed periosteum, many limit their attempts to local means, and often succeed in effecting a cure by frequent applications of leeches to the inflamed gum, and in very obstinate cases, by incisions freely made through the gums and inflamed periosteum. Last year a patient of mine was thus affected, and thus treated, and although under the care of a most skilful surgeon, and of an eminent dentist, he lost successively a left bicuspis and molar of the upper jaw. His sufferings were for a short time relieved by the extraction of each tooth, but in a few days became as agonizing as ever, when finding all the neighbouring teeth loose, and being told that they also must soon be drawn, he had recourse, in despair, to a celebrated homœopathic doctor, whose infinitesimal doses completely failed; for the patient's sufferings were produced by a direct physical cause, which lay far beyond the limits to which the influence of even the most powerful imagination can possibly extend. Happening to mention his wretched state to me, I immediately recollected, that a year before I had successfully treated him for a periostic affection of the sternum and ribs, and that hydriodate of potash was the medicine which served him most. I recommended him to use ten grains of it three times a day, and had the satisfaction of perceiving a daily improvement, so that pain and inflammation soon ceased, and in about ten days the teeth were all fastened.

The periostitis to which this gentleman was liable was of a rheumatic nature; otherwise his constitution was sound, and he was only thirty-four years old.—*Dublin Journal Medical Sciences.*

38. *Crural Hernia—Operation—Death.*—Mr. Porter communicated to the Surgical Society of Ireland, the following interesting case:—A man 70 years of age, was admitted into the Meath Hospital on Sunday evening, with symptoms of strangulated hernia. He had a tumour in the left groin, resembling in size and shape, the longitudinal bisection of a turkey egg; above it, the line of Poupart's ligament could be felt, and from a brief examination, Mr. Porter was satisfied, that it was a case of crural hernia. The man vomited, and had considerable pain. As persons at that time of life, bear strangulation of the intestine very badly, and sink very rapidly under its effects, Mr. Porter thought there was no time to be lost, and proceeded, without delay to the operation. Previous to this, however, he was anxious to ascertain the contents of the tumour, and with this view, made careful percussion over the whole of its surface. It sounded dull at every spot but one, where there was a slight degree of clearness. This led him to conclude, that it was an old omental hernia, but that a knuckle of intestine had recently slipt down, and becoming strangulated, had given rise to the bad symptoms. In performing the operation, he took very considerable pains to avoid the spermatic artery, and in particular, only introduced as much of the blade of the knife as would be barely sufficient to free the stricture. Having removed the stricture, he replaced the knuckle of intestine with great facility, but when he attempted to reduce the omentum, he found it strongly adherent. This occasioned a considerable degree of perplexity, for Mr. Porter has found by experience, that leaving the omentum in the wound leads to bad unhealthy sloughing, which generally proves fatal, while on the other hand, excision is highly dangerous where there are large veins, it being a matter of great difficulty to prevent hæmorrhage into the cavity of the abdomen. He therefore, adopted the only alternative, which, under the circumstances, appeared to him to be least pregnant with danger. Having carefully divided the adhesions, until the prolapsed portion of omentum was quite free, he re-

turned it with as little disturbance or handling as possible, and closed the wound. The man went on well on the following Monday, Tuesday, and part of Wednesday. He slept tolerably well, had two or three discharges from his bowels daily, and complained of nothing but an old cough, which disturbed him from time to time. On Wednesday afternoon, he said he felt considerable pain in the belly. Mr. Porter examined him, and found a hard tumour near the place where the hernia had existed; this he concluded to be the returned portion of omentum in a state of inflammation. Leeches, purgatives, and all the usual means were tried, without avail, the man's bowels became obstinately constipated, and nothing could move them. The tube was introduced by Mr. Parr, with his usual dexterity, and enemata of various kinds administered, but without effect; symptoms of peritoneal inflammation set in with great intensity, and the man died about forty-eight hours after the first appearance of the attack. On dissection, marks of extensive peritoneal inflammation were discovered. The omentum adhered to the parietes all along the front of the abdomen, and was divided by the incision, which opened the cavity of the latter. The prolapsed knuckle of intestine, was of a darker colour than the rest of the tube, but was otherwise sound. The omentum was hypertrophied and the part which had been protruded was so dark in its colour, and of so offensive a smell, that Mr. Porter looked upon it as gangrenous. The next step was to dissect carefully about the seat of stricture, in order to verify the amount of danger incurred in dividing it. He did not intend to enter into any anatomical disquisitions on the occasion, but merely to state the facts, and these were, that in dividing the stricture, the edge of the knife had gone within half a line of the artery, and had it gone the least bit farther, the vessel must have been wounded. This fact showed the value of Scarpa's advice, and the danger to be apprehended from the proximity of the spermatic artery. Besides, it is sometimes difficult to say whether the hernia be an inguinal or a crural one. A very curious feature in the case was, that the man should have gone on so well for three days after the operation, and then that inflammation should have commenced at one spot, and extended so rapidly over the whole abdomen.

Mr. Hargrave said he had operated on a case of hernia, in which there was a large portion of protruded and adherent omentum. He cut away nearly the size of a small orange; not thinking it advisable to replace it, the patient went on very well for some hours, and then sank apparently of internal hæmorrhage. He would sooner apply a small ligature to restrain venous hæmorrhage, than run the risk of effusion into the abdomen.

Mr. M'Coy mentioned a case of old inguinal hernia which had become strangulated. After removing the stricture, he found that a portion of omentum was so strongly adherent, that he could not separate it without a very tedious dissection. He left it in its situation, and closed the wound. The man recovered and remains still with a tumour in his groin.—*Dublin Med. Press.* January 8, 1840.

MIDWIFERY.

39. *Hæmorrhage into the Abdominal Cavity after Labour.*—An interesting case of this is related in the *Lancet*, (5th Sept. 1840,) by Mr. Warwick. The subject of it was a female ætat. 28, apparently in perfect health, who was taken in labour two or three weeks before her expected time. Labour pains came on in the morning, and Mr. W. was sent for about five in the afternoon. He found the os uteri dilated to about the size of a half crown; parts generally soft and dilatable; pains recurring at regular intervals, but weak and unfrequent. The patient was rather restless. The labour progressed gradually but slowly for about two hours, when suddenly uterine contraction came on; one pain expelled the head and shoulders; another the body, placenta, and a large coagulum of blood immediately afterwards. The uterus contracted at once to its usual size

after delivery. The patient was faint and much exhausted. A quarter of an hour afterwards Mr. W. found her still in the same condition, and she replied when asked how she was, that she was flooding violently. There was no unusual flow of blood externally, however, and the uterus remained contracted. She soon afterwards revived so much that Mr. W. left her about 8 o'clock. She continued to all appearance doing well for two hours, when she again became faint and restless: convulsions came on, and she died before Mr. W. could return.

On *post mortem* examination, about 20 ounces of blood were found in the abdominal cavity; the uterus was contracted to the size of an infant's head; its anterior surface was fissured in several places, the fissures varying from half an inch to an inch in length, but not extending deeper than through the peritoneal covering.

40. *On the danger of injecting Fluids into the Uterus.* By M. HOURMANN.—M. Vidal recently recommended the employment of injections into the cavity of the uterus for the cure of various affections of that organ, and stated that he had found their use very efficacious, and never followed by any unpleasant symptoms. Bretonneau, Ricord, and others who had made use of this practice, had, however, arrived at a very different conclusion, as they found these injections liable to produce many disagreeable effects, acute peritoneal inflammation and death.

M. Hourmann relates a case where violent abdominal pain, followed by metro-peritonitis, was caused by means of injecting a decoction of walnut leaves into the uterus, for the cure of an obstinate leucorrhœal discharge, which had been traced to come from the cavity of that organ. The patient recovered in consequence of a violent attack of hæmorrhage from the uterus, occurring most opportunely within forty-eight hours after the administration of the injection.

M. Hourmann, wishing to ascertain whether these dangerous symptoms could be produced from a portion of the fluid having passed through the Fallopian tubes into the cavity of the abdomen, found, on injecting fluid into the uterus after death, that such was actually the case. M. Nelaton, in repeating the same experiments, observed a still more extraordinary circumstance. The liquid injected into the uterus of a woman who had died of an attack of erysipelas of the face, did not penetrate into the Fallopian tubes, but distended one of the veins of the broad ligament of the uterus, pushing before it bells of air.—*Ed. Med. and Surg. Jour.* from *Journal des Connaiss. Méd. Chirurg.* July, 1840.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

41. *Temperature of the Body after Death.*—It is, probably, a prevalent opinion, that the body after death soon acquires the temperature of the surrounding air, particularly if it be lightly covered. However true this may be, as to the external parts, it would seem, from the observations of Dr. JOHN DAVY, to be far otherwise in the internal organs, even many hours after dissolution. The following abstract is obtained from a paper in his "*Researches Anatomical and Physiological,*" and it may be of some use to examiners, in deciding, how long since, a body has been dead.

The first table relates to deaths that occurred in the British Military Hospital at Valetta, in the Island of Malta in 1828 and 1829. The subjects were all soldiers, and their bodies were in almost every instance removed immediately after death, to a large, airy, and comparatively cold room, covered merely with a sheet and placed on a table of wood.

	Age.	Day of Death.	Disease.	Time of Examination after death.	Temperature of the Room.	Temperature under the Heart.
1	23	Aug. 6, 1828.	Acute Rheumatism,	3½ hours	86°	113°
2	27	Do. "	Sudden,	6 hours	86	108
3	25	Aug. 24, "	Fever,	4½ hours	80	97
4	21	Sept. 11, "	Acute Dysentery,	4½ hours	82	103
5	23	Oct. 16, "	Acute Rheumatism,	14 hours	69	88
6	24	Nov. 4, "	After Amputation,	12 hours	68	93
7	23	Nov. 8, "	Acute Dysentery,	3 hours	66	98
8	33	Dec. 1, "	Apoplexy,	2 hours	62	88
9	23	Dec. 3, "	Consumption,	5 hours	61	90
10	28	Jan. 31, 1829.	Hepatitis,	17½ hours	59	82

In No. 5, the temperature under the lobulus spigelii was ascertained, and not under the heart.

In none of the above cases, according to Dr. Davy, had putrefaction taken place. "It had hardly obscurely commenced."

That these results were not dependent on the warm climate of Malta, is evident from the second series of observations which were made at the General Hospital at Fort Pitt, Chatham, England.

	Age.	Day of Death.	Disease.	Time of Examination.	Temperature of the Air.	Temperature under the Heart.
1	26	Jan. 17, 1838.	Consumption,	28 hours	30°	52°
2	19	Jan. 20, "	Pericarditis,	16 hours	40	67
3	29	Jan. 26, "	Consumption,	18 hours	40	63
4	18	Feb. 9, "	Do.	29 hours	43	57
5	35	Aug. 17, "	Malignant Tumour,	5 hours	68	94
6	40	Aug. 18, "	Chronic Dysentery,	4½ hours	68	93
7	22	Aug. 19, "	Tubercles, &c.	18 hours	68	72
8	26	Aug. 19, "	Dysentery,	16 hours	72	81

In these last cases, the temperature of the brain was also frequently observed, and it averaged from five to ten degrees lower than that of the heart. T. R. B.

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42. *Feigned Deafness.*—"A recruit from Cork who joined the depot of the East India Company at Chatham, alleged that he had almost totally lost the sense of hearing, and the testimony of his comrades from Ireland served to support his statement. Dr. Davies, surgeon to the depot, admitted him into the hospital and put him upon spoon diet. For nine days, Dr. Davies passed his bed during his daily visit to the hospital, without seeming to notice him. On the tenth day, he felt his pulse and made signs to him to put out his tongue; he then asked the hospital serjeant, what diet he gave the man. *Spoon diet*, replied the serjeant. The doctor affected to be displeased, and in a low voice said, are you not ashamed of yourself; the poor fellow is almost starved to death, let him instantly have a beef steak and a pint of porter. The recruit could contain himself no longer. With a countenance expressive of gladness and gratitude, he addressed Dr. Davies, "God Almighty bless your honour, you are the best gentleman I have seen for many a day."—*Marshall on the Enlisting and Discharging of Soldiers*, 2d edition. T. R. B.

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43. *Rupture of the Heart, from external injury or violence*, is probably an extremely rare occurrence. I have only been able to collect the following instances:—

1. A man aged 42, in general good health, was found dead in April 1823, in a chalk pit, in the neighbourhood of Chatham (England), at the foot of a precipice between 50 and 60 feet deep, the greater part of it perpendicular. Exter-

nally, there was no mark of violence or appearance of contusion. The neck of the right thigh bone was found to be fractured. On opening the chest, a quantity of blood was found in the left pleura and the pericardium. The right auricle and ventricle, and the left ventricle were uninjured, but the left auricle and aorta were each ruptured, the former in two places. There were no marks of organic disease in any part of the heart. This case is related by Dr. JOHN DAVY, in his *Anatomical and Physiological Researches*, and he states as the result of his examination of authors, that there is but one other case recorded of "rupture of any part of the heart, from a force acting through the medium of other parts, on this organ, apparently free from disease, and in its perfectly normal healthy state."

2. This is noticed by PORTAL in his Anatomie Medicale. The wheel of a cart loaded with stones, passed over part of the chest of a young man. Death ensued almost immediately, and the left auricle was found open. Chaussier who examined the body, attributed the rupture to compression of the aorta by the wheel, and to over-distension of the auricle with blood, the consequence of that obstruction.

3. Dr. JOHN GAIRDNER, in the *Edinburgh Medico-Chirurgical Transactions*, Vol. I, p. 662. The subject was a girl ten years of age. The wheel of a loaded cart passed over her body, and her death was quite instantaneous.

There was scarcely any perceptible impression of the wheel externally, and no subcutaneous extravasation, except a very slight one under the left nipple. Not a rib was broken. The abdomen was perfectly natural. In the thorax, the only deviation from the healthy state was rupture of the heart, with extensive laceration of its substance. Both auricles and both ventricles were laid open by the laceration, and the septum was torn to shreds. About one-half of the substance of the heart had burst a way for itself through the pericardium into the right cavity of the thorax.

4. Professor GEOGHEGAN mentions another in the *Dublin Medical Press*, of a girl aged 7, struck by the wheel of a jaunting car. She was instantly killed. On examination, not the slightest external mark of violence could be discovered; but the heart was ruptured throughout almost its entire length. Dr. G. refers to additional instances mentioned by Professor Christison in his lectures.

5. Mr. JEFFERY, *London Medical Gazette*, Vol. 26, pp. 464. A smuggler was found dead under the cliffs at Sidmouth, having fallen from a height of about 100 feet, whilst drawn up with some kegs of spirits. There was a few slight bruises about the body, but no penetrating wounds or fractures. The right auricle was ruptured, so as to admit the little finger. He was an individual in good health, and there were no marks of organic disease. T. R. B.

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44. *History of a supposed Hermaphrodite.* By ROBERT MERRY, Surgeon, and its dissection by SIR ASTLEY COOPER.—Mary Bennet, aged 86 years, died in 1840, of a gradual decay of her natural powers. She had resided in Herefordshire for the greater part of her life, obtaining her bread generally as a straw-plaiter, and occasionally going out as a char-woman. She was extremely muscular and powerful, capable of severe labour. As a girl, previous to puberty, nothing is positively known about her, but there was a rumour, that she was not formed like other girls. No menstrual secretion ever appeared during her life; she had nipples, but no protuberant breasts. Her voice was gruff and masculine, as was her general appearance. She was never married, disliked the society of men, and shunned that of women, and during the greater part of her life, inhabited a cottage by herself.

Mr. Merry, soon after death, removed the parts of generation, and gave them to Sir Astley Cooper. "The pudenda and mons veneris had their usual clothing, and upon separating the labia, the glands and corpus clitoridis appeared of a very unusual length, being elongated to two inches. The papillæ of the glans were particularly large and conspicuous, and must have possessed an extreme degree of sensibility. There was a slight depression in the glans where the urethra might have been supposed to exist, but there no opening existed. Much nearer to the pubes, on the lower part of the clitoris towards the perinæum, the urethra appeared open upon its under side, and some lacunæ were seen there, but under the arch of the pubes, a circular opening existed, which was the urethra, resembling the orifice of the meatus urinarius." The labia projected on each side of the clitoris, but they contained no testes, and the projection was found to consist of fat. A bougie passed readily from the urethra into the bladder. In the urethra, under the pubes, *when its canal was opened*, there appeared a longitudinal opening between the folds of membrane. This opening or slit led directly into the vagina; it was longer from before backwards, than from side to side, and its size would allow a common pen to enter it. The vagina had no os externum, but only this slit from the urethra. It terminated in a well formed os uteri. The uterus was of its usual form, and had a Fallopian tube attached to its fundus, and the ligaments of the ovaria to its side. On the right side, the ovarium remained and had its usual internal appearance, but it was not more than half its natural size.

"This woman, therefore, (concluded Sir Astley,) differed from others in the magnitude and length of the clitoris, in the absence of the external orifice of the vagina, which began from the urethra itself, and in the imperfect development of the ovarium." And to this imperfect development, he ascribes the suppression of the menstrual secretion.—*Guy's Hospital Reports*, for October, 1840.

T. R. B.

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45. *Injurious and poisonous effects of the Hydriodate of Potash and Iodide of Starch.*—Dr. Lawrie, of Glasgow, relates several instances, as coming under his own observation. In one case, two and a half grains of the hydriodate were prescribed daily. After the third dose, dryness and irritation of the throat came on, which ended in all the symptoms of severe spasmodic croup. Active remedies were needed to remove the complaint. Similar consequences occurred in several other persons. To a patient admitted into the Glasgow Infirmary, for a cancerous ulcer at the root of the tongue, a drachm of the iodide of starch (containing only one grain of iodine) was prescribed morning and midday; with extract of hyoscyamus at bed time. After taking ten doses, he was seized with dyspnœa and swelling of the throat, which gradually increasing and not much relieved by an emetic, ended in sudden death. The body was not examined. In another instance, the hydriodate, with infusion of quassia, was directed for sinuses after buboes and secondary ulcers on the thighs. After taking this for about a fortnight, dyspnœa also came on suddenly, which refused to yield to active remedies, and death soon followed. Dr. Lawrie regrets that tracheotomy was not employed. On dissection, the mucous membrane of the larynx and adjacent parts was found œdematous, and the right lung congested.

Dr. Lawrie has no doubt of the iodine being the cause of death, in each of these cases, and that it exerts its poisonous influence on the mucous membranes of the air passages, not as a direct irritant, but indirectly through the circulation, in the form of acute inflammation.—*London Medical Gazette.* July, 1840.

T. R. B.

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46. *Action of Bromine and its Compounds.*—At the annual meeting of the British Association, for the advancement of science, in September last, held at Glasgow, Dr. Reid communicated a paper by Dr. R. M. Glover, "on the medicinal action of Bromine and its compounds." The principal conclusions from the experiments made, to ascertain its physiological action, were as follows:—whether bromine be taken into the lungs in the form of vapour, or in the fluid form into the stomach, or be injected into the circulation, it acts purely as a corrosive or irritant; the action on the primæ viæ is different from that of hydrobromic acid, into which bromine is converted, when absorbed into the circulation. The author extends this observation by analogy to chlorine and iodine and their hydracids. Bromine exerts an action on the rectum, like that of iodine; it is also tonic and diuretic; its remedial virtues are chiefly conspicuous as an external application in the treatment of scrofulous, syphilitic, malignant and specific ulcers; in these cases, it appears to act as an excitant, and perhaps as a mild

caustic; it is also useful in some chronic diseases of the skin. The bromides of potassium, sodium and mercury, resemble much more the chlorides of these bases than the iodides, in their physiological action. The bibromide of mercury has no advantage over the bichloride, as a remedy, contrary to what has been asserted by some French writers. The bromide of cyanogen possesses a double action; in a powerful dose it operates like prussic acid; in a moderate one it produces the most violent symptoms of irritant poisoning, &c.; perhaps the most powerful irritant known. Ammonia is its best antidote. The chlorides and bromides of olefiant gas exercise a remarkable action, introduced either into the stomach or circulation; in the former they produce, in a large dose, death by coma; in a smaller dose, loss of power over the voluntary muscles, sensibility being retained, with difficulty of respiration, from effusion into the lungs; in the latter, when injected into the veins, they cause almost instant death, producing great congestion of the lungs and destroying the irritability of the heart; in smaller doses, death is produced in the same manner as by their introduction into the stomach.—*Athenæum.* October 3, 1840. T. R. B.

47. *On a Mode of Detecting Minute Portions of Arsenic.*—By Dr. Clark, of Aberdeen. This mode has been applied by the author, to the detection of arsenic in commercial specimens of the metals tin and zinc. Grain tin, made in Cornwall, contains arsenic, which seems to be the occasion of the peculiar smell of the hydrogen evolved from that metal by the action of acids. All the specimens of commercial zinc, that the author has happened to try, were found to contain arsenic. Pure muriatic acid, diluted with distilled acid, is poured upon the metal, and the hydrogen evolved is passed first through a solution of nitrate of lead, and next through a solution of nitrate of silver. Nitrate of lead seems not acted upon by arseniuretted hydrogen, at least, when in very small proportion, but were any sulphur present in the metal, sulphuretted hydrogen would be evolved in consequence, and the solution of nitrate of lead would be blackened, which, however, the author did not observe ever to occur. But nitrate of silver seems immediately to be acted upon by most minute portions of arseniuretted hydrogen. A bluish black precipitate is formed, which, to judge from a qualitative analysis, appears to be an arseniuret of silver. This bluish black precipitate may be collected with remarkable facility, from its falling readily from the solution, which it leaves perfectly clear. Heated in a small tube, so that the matter heated comes into contact with the air, the bluish black precipitate evolves arsenious acid, which, by the liquid tests, may be further satisfactorily recognized. Antimony produces a similar precipitate, so that the mere appearance of the precipitate is not enough, without the production and recognition, by the usual methods of the arsenious acid. By a few evident modifications, this method may be applied to medico-legal investigations.—*Athenæum.* October, 17, 1840. T. R. B.

48. *On the Tests of Sulphuric Acid when thrown on a Person.* By R. D. Thomson, M. D.—A case had lately occurred to Dr. T. and which was brought before the last session of the Central Criminal Court, which proved that the mode of determining the presence of *free* acid by *mere* testing, was by no means satisfactory. A woman in a fit of rage, threw a quantity of oil of vitriol at the face of a cab master, and before he could wash off the acid, two minutes had expired; the consequence was loss of vision in the eye. But besides having the eye injured, his hat was also discoloured. This was sent to Dr. Thomson, to determine the nature of the agent used. The result was, that this hat, as well as an uninjured one, contained sulphuric acid, as tested by nitrate of barytes and a solution of the soluble matter of both states of this article of dress, afforded an acid reaction. It was therefore necessary to adopt some method which would afford a discriminatory test between the free and combined acid; the usual mode, viz., by boiling with carbonate of lead, and concluding if any insoluble sulphate of lead was formed, that the acid existed in a free state, was found to be totally fallacious, because carbonate of lead, contrary to the opinion stated in works of

medical jurisprudence, decomposes sulphate of soda. Besides, it was shown that many of the so called neutral sulphates exhibit, in reality, an acid re-action upon test paper, as in the instances generally of sulphates of potash, iron, soda, barytes, and also in the cases of alum, &c., and hence the excess of acid attached to these salts, would be apt to act as free acid upon the barytes test. The author, therefore, concludes, that the only demonstrative proof which chemistry affords, is a quantitative analysis. Thus he found the entire hat to contain .356 per cent. of sulphuric acid, probably in the state of alum and copperas, and the injured hat 1.379 per cent.; or in other words, the hat had received from the injury 1.023 per cent. of free sulphuric acid. Here then was afforded clear evidence of the nature of the agent employed, and which could not have been conclusive, if the matter examined had only amounted to a drop or stain.—*Athenæum*. October 10, 1840. T. R. B.

49. *Hydrated Peroxide of Iron in Poisoning with Arsenic.*—Dr. B. Puchelt the son, records in the *Mediciniache Annalen*, (No. 4, Vol. V,) seven cases of poisoning with arsenic successfully treated with hydrated peroxide of iron.—*Gaz. Méd de Paris*, April 18, 1840.

50. *Lemon Juice the Antidote for Poisoning by Hyoscyamus.*—Dr. Medoro relates in the *Giornale per service di progressi della Pathologia et della Therapeutica*, (February, 1840,) four cases, where the poisonous symptoms resulting from an over dose of hyoscyamus, were instantly arrested by the administration of lemon-juice.—*Edinburgh Med. and Surg. Journ.*, Jan. 1841.

51. *On the True Nature of the Hymen.* By M. J. J. Virey.—M. Virey endeavours to prove that the hymen is nothing else than the raphe of the median line, dilated and dehiscent in the sexual organs of the mammiferous females, and analogous to the frænum of the *glans penis* of the male sex. In the male the suture of the raphe remains connivent; but in the female, on account of the natural opening of the vulvo-uterine canal, this suture remains distended, stretched, and dehiscent.

From the comparison of the genital organs of the two sexes, he arrives at the conclusions; 1. That the fold of skin called the prepuce is analogous to the nymphæ; and, 2. That the membrane of the hymen is analogous to the frenum of the glans. This, he thinks, is very clearly proved in the case of hermaphrodites, and in embryos at the age when the sexual organs, still imperfectly developed, have not acquired their external development. The penis is then no larger than the clitoris, the urethral canal opens inferiorly, whilst the scrotum is retracted inwardly, and constitutes the vulvo-uterine canal. But at the entry of this canal the raphe is. obliged to dilate into a membrane which afterwards splits in its middle. It is thus that the hymen is formed in the female, evidently the same organ as the frenum of the glans in the male, which extends downwards, and forms the raphe in the perinæum.

Nature has not then created, as has been often supposed, in the hymen an express and especial organ for the sexual organs of the mammiferous females; (for it exists in most mammiferous animals, as M. Duvernoy has shown,) it is a simple modification of the same raphe which connects the two halves of the body, and which in one place forms the frenum of the tongue, of the penis, of the clitoris, and is shown clearly in the perinæum.—*Gaz. Méd. de Paris*, June 20, 1840, from *Edinburgh Med. and Surg. Journ.*, Oct. 1840.

52. *Complete Absence of Menstruation.* By M. Kruger-Hansen.—A woman of about 58 years of age, of a robust constitution, and who had always enjoyed good health, much younger in appearance than she really was, and in whom all the feminine characters were well developed, never in the whole course of her life had any discharge at all similar to the menses. She never had *fluor albus*, or any abnormal sanguineous discharges or sweats, to compensate for the want of the usual monthly secretion. It is added that the sexual appetite was

present, but that she never had borne children. M. Kruger-Hansen, from this single imperfect case, draws the conclusion, that the menstrual discharge is not absolutely necessary to woman. It is obvious, however, that, before such a conclusion could be drawn, it would be necessary to ascertain whether all the organs were present, and well developed. The omission of this renders the case incomplete.—*Ibid.*, from *Graefe's und Walter's Journal*, vol. xxvi, No. 3.

53. *Wound of the Thoracic Aorta.* By Mr. Smith.—A boy, 16 years of age, was stabbed with an iron nail rod in a scuffle with a smith who worked in the same forge with him. The instrument entered the left side between the sixth and seventh ribs, passed through the lung close to its root, and entered the aorta about an inch above the opening in the diaphragm for the passage of that vessel. The boy died about three and a half minutes after the receipt of the injury. About a pint and a half of coagulated blood was found in the cavity of the pleura. The cellular coat of the artery was only partially divided by the instrument, whilst the middle coat and lining membrane were ruptured throughout their entire circumference.—*Ibid.*, from *Dublin Journal of Medical Sciences*, July, 1840.

MISCELLANEOUS.

54. *Increase of Small-Pox in London.*—It will be seen by the following extract from a circular issued in November last, by the Registrar-General, of births, deaths, and marriages, that small-pox is rapidly increasing in England.

"The deaths from small-pox have rapidly increased within the present year. The deaths in the metropolis at the close of 1839 were 5 *weekly;* last week the deaths registered from small-pox amounted to 54. The rate of increase will be apparent from the subjoined statement.

"*Registered in the* 10 *weeks.*

January 5 — March 14	72, or 7 weekly.	
March 15 — May 23	116, or 12	"
May 24 — Aug. 1	148, or 15	"
Aug. 2 — Oct. 10	225, or 22	"

"The deaths from small-pox in the metropolis are now about 5 *daily;* and at the previous rates of increase will, unless prevented by vaccination, amount to 338 by Christmas, or in the next 10 weeks."

55. *Death of Sir Astley Cooper.*—It is with extreme regret that we record the death of this eminent surgeon and excellent man, which took place on the 12th of February, in the seventy-third year of his age.

AMERICAN INTELLIGENCE.

Post-Mortem Appearances in a case of Fracture of the Head of the Femur within the Capsular Ligament. By Stephen W. Williams, M. D., Lecturer on Medical Botany and Medical Jurisprudence in the New Hampshire Medical College, at Hanover.

Mrs. M. N., of South Deerfield, the subject of the following case, was not seen by me until after her death. Dr. Allen, her professional attendant, informed me that he had been called to her, two or three days before, and found her labouring under excruciating pain in the stomach and bowels, succeeded by retching and vomiting, which continued with almost unabated violence to the time of her decease, notwithstanding the judicious application of remedies.

Autopsy in presence of Drs. Sellon and Allen, and my pupil I. L. Tobey. The subject was extremely fat; the adipose tissue upon the sternum was more than three inches thick, and upon her abdomen more than four. In the cavity of the thorax we found the lungs not diseased, but the heart and lungs were pressed upwards by the diaphragm, so that breathing must have been rendered extremely laborious upon any exercise. Indeed, we understood this was the fact before her decease. The heart was healthy, except that it was so much covered with fat as to obstruct it in the regular performance of its functions. The stomach was about the ordinary size, and healthy; the intestines were unusually filled with offensive gas. The liver was little larger than natural: the upper part of it was mottled with yellow and green, and the substance of it was in a state of softening and our fingers easily passed through the rotten mass in all directions. The gall-bladder was unusually distended with bile, as black and as thick as tar. One of the kidneys was also softer than natural.

During the dissection, it was mentioned that nine years before she had had a fall, and fractured what was supposed to have been the neck of the thigh bone. Her surgeons supposed that they had reduced it at the time of the accident, but she ever afterwards continued to be lame, and she never subsequently walked a step without the assistance of friends or crutches. On examining the limb, before cutting into it, we found it shortened, the foot turned inwards, so that if she ever bore the weight of her body on that side, it must have been upon the outside of the heel. The ham-strings were contracted, but the limb itself had not shrunk. There was an old cicatrix upon the upper and inner part of the gastrocnemii muscle of considerable size, which was from an issue which had formerly been opened there, but for what purpose I do not know. The limb affected was the *right* one. Upon cutting into it over the trochanter the same mass of fat presented itself in the cellular membrane as in the abdomen, but the muscles were small. When the knife reached the trochanter, and the dissection was made a little more towards the joint, it was discovered that there was *a fracture directly through the head of the bone within the capsular ligament, and that the fracture had never been united.* The ends of the fracture had been worn smooth by attrition, and they were covered by a kind of cartilaginous matter, and an *artificial joint* was thus formed. The divided or split head of the bone was left in the socket, but it had never been dislocated. The dissector removed it with a great deal of difficulty. The other end of the bone was then laid bare to a considerable extent, and sawed off six inches from the trochanter, for the purpose of saving the specimen. Upon applying the saw to the femur it was so soft that three strokes of the saw completely severed it. The earthy portions of the bone appeared to be nearly absorbed, but the gelatinous and animal portions of it were so abundant that there was no shrinking of it as to size. This dissection seemed to verify the assertion of Sir Astley Cooper, that, "when the head of the thigh bone is broken in the socket, within the capsular ligament, the bone never afterwards unites."* It strikes me now that I have seen a specimen in a dead preparation at the Albany Medical College, where I was politely invited to attend a lecture upon injuries of the hip joint, by Dr. March, in the fall of 1839, where the head of the bone was broken within the ligament, and afterwards united. I may, however, be mistaken in relation to the fact. At any rate, I feel pretty confident I saw some specimens where union had been effected, where the fracture was partly within and partly without the capsular ligament.

This case was extremely interesting to me, as I have very frequently been called to cases of injuries of the hip joint in persons over 60 years of age, where I have been satisfied there has been no dislocation, but where the patient has remained permanently lame for life. In some cases I have been persuaded that the injury has been in the ligament itself, and in some I think there must have been a fracture of the head of the bone within the ligament. In some, perhaps, there may have been a fracture of the neck of the bone itself.

It was also very interesting in another point of view, as illustrating the credulity of the public at large in relation to *natural bonesetters.* In the year 1827, a man by the name of ———, styling himself a natural bonesetter was invited into this town by the friends of an old lady, who, several years before, had fallen, and, as she supposed, had dislocated her hip, though all the physicians whom she consulted, and they were pretty numerous, assured her that such was not the fact. From the time of the accident to the time when she saw ———, she never walked without crutches. The long expected day at length arrived when he appeared and was to perform the miracle of reducing the dislocated bone. Public expectation was on the tiptoe, and people gathered from all parts of this and the neighbouring towns to witness his mighty feats of wonder. He examined the patient, pronounced the bone dislocated, declared it could be easily reduced, and set apart the evening for the operation. In the meantime patients flocked to him from various parts of this section of the country, inquiring of him whether their bones were not dislocated, and soliciting his advice and assistance. Hundreds consulted him, some from curiosity and some from faith. He declared every one of them to have dislocated bones, some shoulders, some hips, some knees, ankles, toes, elbows, wrists, fingers, &c., &c.; many had nearly all their joints completely out of place, and they had been so for a great number of years, and for from two to ten dollars each he could easily reduce the whole of them, and enable the individuals to walk and otherwise resume their functions with pristine energy. The principal theatre of his operations was a bar-room, and it was said he often had recourse to the jolly god at the bar-room between his manipulations. He generally began by setting every toe and finger in the body before he arrived at the principal joint to be reduced, so that it was no uncommon thing for him to say that he had reduced twenty or thirty bones in one individual, who never before knew that he had a single dislocated bone. And still the gaping multitude looked on and actually believed that he performed all these miracles, and really found every bone dislocated which he pulled upon. Even the evidence of the senses was disregarded, and some who had actual dislocations for years, which could never be reduced, were declared to be restored, although they walked as lame after the operation as before. At this very time there are some who continue to believe that he performed all that he professed to do, although they now, at the distance of almost three years, walk as lame as ever. But the great body of the people are now fully convinced of his charlatanic imposture; and, were he to visit us again to-morrow, he probably would not find half a dozen dupes to operate upon, although it is believed he carried away more than one hundred dollars from this village for his services for a little more than half-a-day. It is said he never visits the same place a second time on account of his impostures.

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* This rule is now known not to be without exceptions.—Ed.

He visited Mrs. M. N., the patient whose limb we dissected, at Bloody-brook, and told her that her hip was dislocated, and that he could easily reduce it. He accordingly attempted it, and put her to excessive torture, and declared that he had set the bone, for which he was paid ten dollars; and, as he said this was a very bad case, he must have ten dollars more, which her husband promised to pay when the patient entirely recovered. The above dissection abundantly proved the accuracy of his prognostications and the success of his operations, and how completely he reduced the *dislocated thigh!*

Case of Acute Enteritis terminating in a Sloughing of a portion of the Colon. By Daniel Coate, M. D., of Merrickville, Upper Canada.—The subject of the present article, Robert White, a native of Ireland, about 36 years of age, and with a robust constitution, was attacked with the dysentery in the month of October last. I visited him twice only while labouring under this form of the disease, he residing at a distance of eighteen miles from me. I treated him principally with calomel and opium, with occasional laxatives; it is unnecessary to dwell upon the treatment; suffice it to say, the attack was one of the severest grade, and the treatment as judicious as I could employ under his circumstances, which were indigent in the extreme. From the period of my last visit, (which was on the 10th,) till the 4th of November, I received no account from my patient, at which time I was requested to visit him again. My attention was first directed to an extraordinary tumour protruding from the anus, and about the size of a large fist; on careful examination, it proved to be a portion of the large intestine "*inverted*," gangrenous in spots: this condition had existed for three or four days at this time. Having washed the portion of the intestine, I proceeded to restore it, which by steady and pretty firm pressure I succeeded in effecting, pushing it as far up the rectum as I could reach, and ordering a T bandage to be firmly applied in order, if possible, to prevent its descending again.

I was now shown a "something" which truly surprised me, when I was informed that it had been discharged per anum by this patient; it had been kept six days in a trough containing water. I brought the substance away with me to my residence, after having stated to the patient and his friends the nature of his case, so much of it at least as was needful for them to know.

On the most careful examination of this substance, I became well satisfied that it was a portion of the large intestine which had sloughed from the upper part of the colon. Its length was about ten inches, composed of all the coats of the intestines. Its situation in the alimentary tract was easily discoverable, by the cæcum or caput coli and the appendix vermiformis, both of which were entire, not having undergone any decomposition, or at least sufficient to prevent them from being easily identified; ulceration in other parts had proceeded to a considerable extent. Upon inquiry and examination, I learned that the patient had passed one or two free stools daily; ate heartily of oat or Indiam meal gruel; felt no pain or definable sensations of distress; his pulse was good; and he uttered a confidence truly incredible, that he would be restored to health and the society of his family. I have not had an opportunity of seeing White since the date of my last mentioned visit; but have reason to be assured that he is alive, and well enough to be pursuing his ordinary occupation as a labourer.

February 2, 1841.

Case of Excision of a portion of the Inferior Maxillary Bone.—By H. H. Toland, M.D., of Columbia, S. C.

August 10, 1835. Toby, a male slave, ætat. 9 years, the property of E. P——, Esq., was placed under my care on account of osteo-sarcoma of the inferior maxillary bone. The disease commenced in 1833, and increased regularly until I saw him. The enlargement extended from the neck of the bone on the left side, to the symphysis, and was so much increased in size as to be in contact with that of the opposite side. The tongue was elevated and misplaced, and mastication and deglutition were performed with difficulty.

An operation being thought advisable, I performed it in presence of and by the assistance of some medical students, on the 13th of August. He was placed in the recumbent position, and an incision made from half an inch below the lobe of the ear to the corner of the mouth, dividing all the soft parts. They were then dissected from the diseased bone and turned down. The bone was next divided on the right side, but near the symphysis, with a small amputating saw, so that all the diseased mass might certainly be removed. It became necessary to expose the superior maxillary bone at its posterior and external portion, so as to have access at the point to which it was desirable to make the section. This being done, and the flap turned up and retained by an assistant, the neck of the bone was divided just anterior to the articulation with Hey's circular saw. Considerable difficulty attended this part of the operation, depending on the great and sudden enlargement of the angle. The diseased bone was then easily separated from the internal soft parts and removed.

There were no vessels divided that required a ligature. The flaps were brought together and closed by the interrupted suture and adhesive strips. Great exhaustion followed the operation, depending both on the violent exertions made by the patient, as well as the shock given to the nervous system by the pain, &c., consequent to such an operation.

For two days he was restless, complained of some pain in the head, pulse 160 and small. These symptoms, however, yielded to the administration of calomel and opium with laxatives.

On the fifth day the ligatures were removed, the wound having healed.

The portion of bone that remained was drawn inwards by the muscles with which it was connected, so that the teeth did not come in contact with those of the opposite jaw, which, after a few months, being encrusted with tartar, and the gums diseased, were extracted.

The diseased bone weighed half a pound, and was so soft that a probe could be passed through it in almost any direction.

Twelve days after the operation the boy was sent home, being almost well, and much less deformed than might be supposed, after losing so large a portion of the inferior maxillary bone.

He is now in good health, and as useful on the plantation as any one of his age.

Some surgeons recommend the carotid artery to be tied before commencing such an operation, lest hæmorrhage might be troublesome. In this case no vessel was divided that required a ligature; cold water with pressure being sufficient to arrest the flow of blood. Nor do I think it necessary in any operation, either upon the superior or inferior maxillary bones, the actual cautery being preferable in operations upon the former, and in those upon the latter, ligatures can always be applied, without difficulty to the divided vessels, so as to control the hæmorrhage. The operation of putting a ligature on the common carotid is, I think, more dangerous than the excision of either the superior or inferior maxillary bones.

Case of Comminuted Fracture of the Parietal Bone, followed by Abscess upon the Dura Mater—Cure.—By Wm. B. Hall, M.D., Sparta, Tennessee.

A mulatto boy, Henry, ætat. about 10 years, fell from a horse October 20, 1840, his head striking against the projecting corner of a rock, by which the scalp was cut through at the most prominent part of the parietal bone, and that bone fractured and depressed. A neighbouring practitioner was called in, who pronounced the bone sound, and after a few days' attendance brought the integuments together, put on a plaster and left, directing the owner not to remove it until the fourth day, when all would be well. Before the four days had expired, slight excitement came on; the face became flushed and the head somewhat painful. These induced the owner to remove the plaster, when, to his surprise, he found the wound filled with matter, and upon further examination, that the bone was fractured and depressed. He immediately put him in the stage and sent him to me, a distance of 40 miles, with a letter detailing the foregoing circumstances. Upon removing the dressing I found a gaping wound, which would receive the largest sized thumb, the scalp puffy and swollen for about the size of the palm of the hand around it. The wound was nearly an inch deep, and filled with a thin fetid pus, which rose and subsided with each pulsation of the brain. After cleansing out this pus the edges of several fragments of naked bone were distinctly observable. The *outer* table of the bone was depressed below the *inner* table, so as to leave openings communicating with a cavity within the cranium, apparently *coextensive with the puffiness of the scalp.* The extent of the vault depressed was of about two inches in diameter, and of a somewhat circular form. The quantity of pus discharged was equal to two or three tablespoonfuls every 24 hours, and flowed out into the cuplike wound through the openings between the fragments of the depressed and the undepressed bone.

On the 7th September I enlarged the original wound, and with Hey's saw removed a projecting corner of skull. I then removed the smaller fragments of bone, and elevated the larger ones to their proper position. The wound continued discharging the matter which formed in the cavity, in gradually diminished quantities, till the cavity finally filled up and the wound was cured, which was about the middle of November.

The remarkable feature of this case remains to be told. During all the time the patient was under my care, there were *no symptoms of constitutional disturbance from the injury.* He was cheerful, able to run about, and engaged in play eagerly. I learned also, that when he received the fall, he got up immediately, though he was a little sick for some few minutes. After this passed off, with the exception of the slight excitement before detailed, (and which must have been very inconsiderable, as it was not deemed an obstacle to his riding in a hack 40 miles in a day,) no constitutional disturbance whatever, or symptoms of compression resulted from the injury.

Case of severe Injury of the Leg. By Wm. M. Egbert, M.D., of Manayunk.

February 8, 1840. William Bonner, of Manayunk, house carpenter, ætat. 23 years, of good habits, sustained an injury from a large mass of frozen earth falling upon him while in a stooping attitude.

When he was disinterred, and reaction sufficiently established, I ascertained upon examination that the main blow had been received upon the back, in the cervical and dorsal regions, those parts being much bruised and otherwise injured. Both the malleoli of the right leg were broken off entirely, and complicated by an external wound leading into the joint, and opening it wide enough to admit with ease two fingers. The tibia was also fractured transversely two inches and a half above the joint, and the inferior fragment split longitudinally throughout. The superior portion of the fibula was driven through the wound into the earth an inch or two; the foot was bruised considerably. With the assistance of my young friend Dr. Levering, I adjusted the fragments, closed the wound by adhesive straps, and applied the graduated bandage of Scultetus. After venesection, the leg was placed in an appropriate box and quietude enjoined. Slight extension and counter extension were kept up through the night, with the design of subduing muscular contraction and supporting the leg while becoming habituated to its situation. Refrigerant applications were ordered to prevent high inflammation.

9th. The patient had slept comfortably during the night; much œdema of the foot and leg; pulse 85, full and strong; the tongue furred and skin dry. I removed the extending bands, ordered a saline cathartic and continued the cold applications.

10th. Pulse 70 beats in a minute, and much softer; swelling decreased, and complains of but little pain. Regimen antiphlogistic.

11th. No change of symptoms worthy of note. The bowels were opened by oleum ricini.

12th. The pulse 90, small and irritable; the tongue more heavily loaded and the limb considerably swelled in the region of the injury. The edges of the wound were retracted half an inch and turned outward, exhibiting a pouting aspect. The discharge from the joint considerable, and of a very unhealthy character; no pain; removed the adhesive strips; dressed the ulcer with basilicon ointment; ordered a stimulating liniment applied to the foot and leg, and prescribed a more generous diet.

13th. Pulse greatly accelerated, tremulous and typhoid in character, the tongue dry and heavily loaded with a white fur. He was very restless; complained of pungent pain in the leg, which was increased in size; quite insensible to touch, and of a greenish livid hue. A large fungus had shot out of the joint, blocking up the wound entirely, which was two inches long and dilated an inch in width. There was a copious ill conditioned sanious discharge; I ordered a good diet; applied lunar caustic to the fungus, and continued the stimulating embrocation.

14th. All the unfavourable pheuomena of yesterday aggravated, and the fungus elevated five lines or more above the circumjacent tissue. I excised the fungus as low in the wound as possible; applied the actual cautery; ordered an emollient poultice and continued the other remedies as directed yesterday.

15th. Pulse much improved; limb more sensible, and the treatment of yesterday continued.

16th. The extremity is quite sensible; the tumefaction declining; the pulse less frequent, and slightly expanded; the tongue is moist and cleaning at the edges. Treatment continued as before indicated.

18th. The whole phenomena decidedly more favourable, the leg very much reduced in size, and sensibility more acute, the tongue disposed to clean generally; pulse increased in volume and less impetuous; the ulcer white and healthy at the edges, but the discharge still abundant. I discontinued the poultice and prescribed a wash composed of equal parts of lime water and a decoction of white oak bark.

20th. The discharge diminished two-thirds in quantity, and the whole appearance favourable. The caustic kali was substituted for the actual cautery.

28th. The ulcer is reduced to one-third its former size, and healthy; a perfect reunion between the fragments appears to be established; the tibia is one-fourth wider than natural at its articulating extremity.

March 12th. The ulcer is entirely healed, the swelling is comparatively slight, and my patient can step with the aid of a cane.

May 1st. Bonner has recovered completely and is enabled to attend to his ordinary vocation.

July 20th. The leg continues sound and healthy, and he enjoys the use of it, performing partially all its accustomed motions, those of flection, extension and adduction tolerably, but abduction and circumduction with less facility.

The following inquiry is naturally suggested, viz: Why is not the joint anchylosed. The capsular ligament is extremely delicate, and must have been lacerated, as the wound on the external part of the joint admitted two fingers to be introduced between the articulating surfaces of the tibia and astragalus. The synovial membrane must have been detached from its fastenings and the lubricating fluid discharged, yet the ankle is not stiff.

January 2d, 1841. Bonner is gradually recovering the use of his foot. The motions of the ankle are much improved. He walks now with considerable freedom. There is but a slight halt in his gait. The joint appears healthy.

On the present condition of the Mineral Springs at Saratoga.—By Milo L. North, M. D.

To the Editor of the American Journal of Medical Sciences:

Sir—In the belief that many of the readers of your wide spread journal may be gratified to hear occasionally of the progress of such matters as are connected with our profession at Saratoga, I send you a sketch of the state of things here during the three past seasons. The principal street of the village, Broadway, is about one mile in length, running nearly north and south, and one hundred and forty feet in width. There are several streets nearly parallel, and it is crossed by a number at right angles. It lies along the west bank of a hollow or ravine, which is from 10 to 20 rods in width, and gradually deepening as it proceeds to the northeast. The bottom of this ravine is formed of black soil, so soft as to have rendered it formerly very difficult for animals to pass through it except in dry times. Along the surface of this marsh flows a small stream which originates from a fresh water fountain in the southwest part of the village, crosses Broadway near its south end, and following the course of the ravine, it proceeds northeasterly till beyond the bounds of the corporation. Through this mass of mud many of our mineral springs make their passage from beneath: and it would seem that this excavation or hollow in the wide and sandy plains of Saratoga must have been originally formed by the combined action of the fresh water stream, and the numerous gaseous fountains that burst up from beneath an extensive limestone formation on the west side of the hollow, and terminating at its edge. Two of these fountains originally deposited so much lime and other ingredients held in solution by the carbonic acid gas, at their place of exit from the ground, as to acquire respectively the names of Flat Rock and High Rock Springs. Although the surface of the land on the east side of this valley is beautiful and inviting and there are many who have built or are building dwelling houses there, yet the village principally lies on the west side. The soil in the vicinity is light and sandy, and was originally covered with white pine timber. The place is 7 miles northeasterly from the village of Ballston, 22 miles northeasterly from Schenectady, 38 by railroad from Albany, and about 10 miles directly west from the Hudson river, and contains about 2500 inhabitants. Its waters are its only means of prosperity. The *Old Congress Spring*, now owned by Dr. Clark, has almost alone been the cause of building up this famous and beautiful place, and that within the space of 50 years. This celebrated fountain is known not only throughout the principal cities of our own country, but in many places in Europe. The art of bottling has become such that a citizen of New Orleans, or London, or Paris, can, in his own house, acquire a very correct knowledge of its taste and medicinal power. Had not invalids possessed the opportunity of learning the effects of this water at home, the resort to its fountain head never could have been so great. In stating the history of their diseases and remedies they frequently assert that, finding the Congress water to keep their disease at bay while at home, in the failure of other remedies, they have thus been induced to come to the spring itself. Such persons seldom fail to receive great benefit from the visit. The spring is situated near the south part of the village, a few rods east of Broadway. The following is its composition, as given in the last edition of Steel's Analysis, published by G. M. Davison, in 1838. One gallon or 231 cubic inches contains chloride of sodium, (sea salt) 385.0 grains; hydriodate of soda, 3.5; bicarbonate of soda, 8.982; carbonate of lime, 98.098; carbonate of iron, 5.075; silex, 1.5; hydrobromate of potash, a trace; in all, 597.943 grains. Carbonic acid gas, 311 cubic inches, atmospheric air, 7; gaseous contents, 318 cubic inches.

Let any physician attentively consider the constitution of this water, and he cannot fail to be impressed with its admirable qualities both as to taste and medicinal power. The carbonic acid has most certainly diminished within 20 years; and as this is the principal cause of the pungency of the water, it has become a regular stereotyped report from year to year that this water is losing its "strength." Yet as it is still more than saturated with the gas, and, therefore, all the mineral ingredients are held in solution, which would be insoluble and precipitated without it—this remedy is, in my estimation, not the least deteriorated in its application to the *whole range* of diseases. As the extra carbonic acid appears to produce the vertigo, and sense of fulness across the forehead soon after its being swallowed, much to the annoyance of full entonic habits, the water is probably attended with less troublesome effects than it was 20 years ago. If any one doubts the estimation in which this spring is still held by the public, let him take his station for an hour at the dipping room some pleasant morning in July. It was scarcely possible for the groups to be supplied in the morning till the recent discovery of two or three other springs has, in some measure, drawn off the pressing crowds at the Congress. Before dismissing this spring, I would make a single suggestion to physicians abroad, whose patients consult them about visiting Saratoga. If they feel hesitation about assuming the responsibility of advising the excursion, let a few bottles of the Congress be ordered and the patient be directed to take one each morning early, containing, if necessary, some saline ingredient in sufficient quantity to become decidedly cathartic each day. If the result is favourable there is scarcely a doubt that the journey, water, and baths at the fountain head, will fully sanction the physician's advice.

Within a few years, Mr. Lewis Putnam has discovered and curbed a new fountain about 40 rods northerly from the Congress, which he has named the *New Congress*. It is a delicious water, is highly purgative, deobstruent, and tonic, and contains more iron than any spring in the place. The following is its analysis, made in the summer of 1840, by Dr. J. R. Chilton, of New York: One gallon contains chloride of sodium, 214 grains; sulphate of soda, 1.68; carbonate of soda, 14.32; carbonate of magnesia, 51.60; carbonate of lime, 68.80; iodide of sodium, with a trace of bromide of potassium, 2.0; carbonate of iron, 7.00; phosphate of lime, .21; silica, .84; alumina, .56; in all, 361.01 grains. Carbonic acid, 326.4 inches; atmospheric air, 6.4; total 332.8 cubic inches. This is a favourite spring with many visitants; and if the patient be of atonic diathesis no one can be better chosen for the removal of his complaints.

In the summer of 1839, the *Iodine Spring*, in the north part of the village, was brought into notice. It was analysed by Professor Emmons, of Albany, and also by Dr. Chilton, of New York. Their results are so similar that I transcribe only that of Professor Emmons. In one gallon, chloride of sodium, 187 grains; carbonate of magnesia, 75.; carbonate of lime, 26.; carbonate of soda, 2.; carbonate of iron, 1.; hydriodate of soda, 3.5; total, 294.5 grains. Carbonic acid, 326. inches; air, 4.; total, 330. There are two qualities peculiar to this water: it is lighter in its amount of ingredients and has much less iron than the other fountains. On both these accounts it has proved an acceptable auxiliary in treating diseases in full, plethoric, entonic habits. Even incipient phthisis has never been injured by it, when properly guarded. There were perhaps twenty cases of pulmonary hæmorrhage and tubercles last season, in which the patients remained various periods taking the water with the proper auxiliaries, and with apparent benefit. It would be wrong for me strongly to recommend the water in this class of diseases without still further trial: but it was very clear last season, both to my partner, Professor Delamater and myself, that inflammatory complaints were less liable to be aggravated in using the Iodine water than that of any other fountain. The resort to that spring is continually increasing; and as it remains very clear a long time in the bottle, it has already been ordered to a considerable extent abroad, and bids fair to become widely known and appreciated. In addition to these three fountains, there were, previous to the last season, the Washington, Columbian, Hamilton, Flat Rock, Hall's and the High Rock, all resembling in their constituents the springs already described, all highly charged with carbonic acid, very palatable, and all resorted to by different invalids for the removal of diseases. Most of these were considered more chalybeate and tonic than the Old Congress.

In the spring of the last year, Mr. D. M'Laren, a gentleman of this village, succeeded, after great difficulties and perseverance, in bringing to the surface, from a depth of nearly 40 feet, two copious fountains, which have ever since been discharging their sparkling contents about five feet from each other, and two or three feet above the natural surface of the earth. The amount of gas is so great that it forces up a little shower of watery globules several inches above the surface of the water in the form of a spray. The whole mass of the water seems violently boiling by the escape of the gas.

A most decided sensation was produced, even in the minds of our own citizens, by the brilliancy and rich taste of these new fountains. Forlorn and despairing patients resorted hither in hopes that these deep and pungent waters might bear from the bowels of the earth some panacea for their sufferings. The well were attracted by the superiority of the beverage in point of taste; and, before the season terminated, this new spring became a matter of general discussion and interest among the strangers; in short, it was the *Lion* of Saratoga. Being only a few rods east of the Pavilion Hotel, Mr. M'Laren named it the *Pavilion Fountain.* The following is the analysis by Dr. Chilton of New York. *In one* gallon, taken from the west tube, chloride of sodium, 187.68 grains; carbonate of soda, 4.92; carbonate of lime, 52.84; carbonate of magnesia, 56.92; carbonate of iron, 3.51; sulphate of soda, 1.48; sodide of sodium and a trace of bromide of potassium, 2.59; alumina, .42; phosphate of lime, .19; silica, 1.16; total 311.71 grains. Carbonic acid, 359.5 inches; air, 5.3; total 364.8 inches. A very careful analysis was also made here last August, by Mr. James Thombs, a respectable chemist from New York, with results somewhat similar. This has already been widely circulated by the visitants. As Mr. M'Laren supposes the spring not to have been thoroughly matured last season, he intends another thorough analysis this season.

The beneficial effects of those new waters were so great and convincing on various individuals, that, on leaving Saratoga for home, many ordered a supply from this fountain to be bottled and forwarded for their use at home; and, notwithstanding the iron is deposited copiously in the bottles, large quantities were put up and sent abroad. Although this change is no injury in inflammatory complaints, the turbid appearance may so operate as to prevent its general acceptation in the cities. As the water, however, is said to be very gaseous when the bottles are opened, and tastes equally good as if the iron was not precipitated, there can be no reasonable doubt that the medicine which has thus far proved so great a favourite here, will be sought and used abroad.

The *mode of administration* of these various waters above mentioned, is by no means uniform. The potations at the Old Congress have, for many years, been generally performed in the morning only, taken early, on an empty stomach, and in quantities varying from two to ten half pints, in divided portions. In very torpid habits blue pills, calomel, sulphate of magnesia, calcined magnesia, cream of tartar, &c. are added, either in the evening or morning. The New Congress, Iodine, and Pavilion springs, when taken as laxatives, are taken in nearly the same way. Within two hours and before breakfast the operation usually commences, and is completed before noon. The water is probably absorbed from the stomach with scarcely any abridgement of its constituents, passes through the whole mass of blood, and is thrown off copiously, not only from the colon, in loose, watery dejections, but from the kidneys and skin. It is this thorough ablution, and renovation of the blood, accompanied by a change in all the secretions that renders the operation of these remedies so truly *alterative.* It is this same alterative and prospective effect that brings back many patients who may have left the springs a few weeks previously in a state of discouragement from the perturbation produced by the remedy. Another mode of taking these waters is that of divided portions through the day, in such quantities as the patient can bear without actual catharsis. This plan is also alterative and tonic. It was formerly supposed that the springs which were called chalybeate, such as the Hamilton, Flat Rock, and High Rock, were exclusively appropriate to this process. But, within two or three years, the Congress and the recently discovered fountains have been more taken in this manner than the chalybeate springs, and with manifest benefit to chlorotic, scrofulous, and cachectic derangements generally. A third method was often adopted in the time of Dr. Steel, the former resident physician, viz. that of taking the Congress water in the morning as a cathartic, and then one or two tumblers at 11 A. M. and at 4 P. M. from some of the chalybeate fountains.

The most common *forms of disease* to be found at these springs are the following;—dyspepsia in all its forms, bilious disorders, rheumatism, cutaneous diseases, dropsies, scrofula, intermittent fevers, chronic diarrhœa, neuralgia in all its forms and localities, spinal diseases, nervous diseases in general, nurses' sore mouth, described in your January number by Dr. Backus of Rochester, calculous complaints, enlarged tonsils. The above list is made out from a hasty review of my own case-books, but it does not comprise all the forms of suffering brought here.

Before dismissing the subject of this communication it is proper that *baths* should be considered. The use of these has not been founded wholly on professional dictation. There is a general rush among the sick and the well to the bath houses. Invalids who apply for medical directions *expect* the external application of these saline and gaseous fluids should be combined with their internal use. There is not space for me to enter into the full consideration of the application of baths to the removal of disease. I little knew the responsibility or the power of the remedy till my position here threw that responsibility upon me. After a very anxious search for the truth, I came to the following *criterion* for discriminating between cold, shower and hot baths, viz.—*That in all febrile and inflammatory diseases whether acute or chronic, in short, in all diseases where the lancet is called for, there also will the cold and shower bath be suitable; and where the lancet would be injurious there should the hot bath be used.* Although very many patients have been immersed for ten minutes daily in mineral water at 110° and 112°, carefully keeping the brain so immersed as to preserve it at the temperature of the other viscera, I have not known an instance of unequivocal injury.

By those opposed to the innovation, the languor and faintness produced by the sudden transference of 3 or 4 lbs. of blood from the viscera to the cutaneous surface have been represented to be an injury. But this faintness on coming out of the bath, where it does occur, assists in the revolutionising process of dilating the capillaries of the dermoid system and restoring the blood to its proper channels. It is surprising to see how florid the pale, sanguinous face of the invalid speedily becomes, under the process. When the surface and the extremities have become permanently warm, the hot bath may with great benefit be exchanged for a daily cold shower of half a pailful. This quantity of cold water, suddenly applied in the form of shower-bath has never, under my observation, produced permanent repulsion of the fluids from the surface. In all doubtful cases, where a want of reaction is apprehended, a few quarts of *cold* water, suddenly applied, is much more safe than a larger quantity of either cold or tepid water. *Prolonged hot baths* were tried in a number of instances of rheumatism, followed by distortion of limbs and chalky concretions, last season with decided advantage. The *cold dash* or a stream of mineral water falling several feet upon chronic, local inflammation and swelling, was occasionally used with benefit. *Warm baths*, from 85 to 97 are the baths commonly taken without professional directions. *Cold baths* are less used than any other form.

But I must not obtrude further on your columns. In conclusion, I would say that, in addition to the delicious and powerful medicines that can be taken cool and sparkling from the bosom of the earth, we have an *atmosphere so dry* that gentlemen who have resided in the village many years, have never seen a particle of mould on their books, boots or harness, and that tinned roofs and spires have long stood bright and glittering; so *balsamic* from the many pines in and around the place as to produce a terebinthinate smell in the lodging-rooms; and so *cool* that the multitudes scarcely ever complain of excessive or prostrating heat, but appear panic-struck at the occurrence of a frigid north-wester even in July. Of *amusements* there are at least a fair proportion compared with other watering places.

That Saratoga is very *accessible* is fully known abroad: and when, in the course of the present year, it shall be connected to Boston as well as New York and Buffalo by railroads, it will bring these fountains, figuratively speaking, to every invalid's door. Even now, a valetudinarian can come from the lower part of North Carolina, all the way by steam in two or three days, and, probably, with less wear and tear than to ride 30 miles, in the interior by stage. These increasing facilities for travelling are one reason of the increasing throngs that resort to these springs.

To my medical brethren, scattered throughout the country and who feel just solicitude to adopt the most promising means for the recovery of the patients submitted to their care, these hasty remarks, through your columns, are respectfully submitted.

Report of the Obstetric Practice in the Philadelphia Dispensary for the year 1840. By Joseph Warrington, M. D., Accoucheur.—*One hundred and thirteen pregnant women* have been under care during the year. Of these 110 have been safely delivered at full term; 1 aborted at about five months, and 1 at about four months, in consequence of personal injury; 1 died undelivered, in an impracticable labour, resulting in rupture of the uterus.

One hundred and thirteen children have been delivered at term, there being three cases of twins—two with boys, and one with girls. The case of the male child, which died in utero, and the two cases of abortion, are not included in this enumeration

Fifty-five of the children were boys, and fifty-eight were girls.

Four of these children were stillborn—the death of three appearing to be recent, while in one case there was no doubt but it had occurred some weeks previous to delivery.

Of the other children, one died in convulsions on the third day after its birth; one male child had its urethra blocked up by tuberculous deposit, which was relieved by the introduction of the catheter by Dr. Mütter, and finally cured by diuretics; one female child had occlusion of the meatus urinarius overcome by several introductions of the catheter by myself; one child had hare-lip successfully operated upon by Dr. Mütter; one had a large tumour on the scalp, respecting the propriety of removing which the surgical skill and experience of Dr. W. Poyntell Johnston, were solicited and obtained; one child had icterus, which was cured by minute doses of calomel and bicarbonate of soda. All the other children were doing well when they passed from under the care of an accoucheur.

Of ninety-nine cephalic presentations, fifty-two were in the first position of the vertex, fourteen in the second, one in the third, two in the fourth, and one in the fifth; this last was converted into a first position. Of the remaining twenty-nine the positions were not satisfactorily ascertained.

Of four pelvic presentations, two were in the second position, and one in the fourth position; the other was not satisfactorily diagnosticated.

In seventy-one cases of labour, the average duration was fourteen hours forty minutes—the extremes being one and fifty-two hours.

The average amount of time occupied in the delivery of the placenta, in seventy-six cases, was forty-six minutes, the extremes being five minutes and eight hours.*

Ergot was administered in one case to terminate a labour, which had continued fifty-two hours. It was also given in a case of placenta prævia, to shorten the second stage of labour; also, in two cases of hæmorrhage, after extrusion of the child.

Delivery was accomplished by the use of the forceps in three cases, in which both mother and children did well. In a fourth case they were applied ineffectually, rupture of the uterus taking place, and the woman dying undelivered, apparently in consequence of the excessive size and firmness of the child's head.

There were two cases of profuse hæmorrhage, with retention of placenta, in which ergot was used for the purpose of exciting uterine contractions. Free friction and compression of the abdomen, and removal of the placenta appeared to be the most efficient means of relief, the ergot seeming not to act in either case.

There was one case of adhesion of the edge of the placenta and a considerable portion of the membranes—it was attended by very alarming hæmorrhage, which could not be arrested until the hand was introduced and the secundines removed.

There was one case of hæmorrhage during labour, from an implantation of the placenta upon the cervix uteri. The tampon was introduced and sustained by two assistants, who made constant pressure upon the perinæum with compresses, until the completion of the first stage of labour. Ergot and brandy were then freely administered, (the woman being prostrate from the loss of blood;) the membranes were ruptured artificially, and the hæmorrhage arrested by facilitating the descent of the breech (the original presentation) into the orifice of the uterus; the child was dead, apparently in consequence of the loss of blood through the placenta.

There were two cases of metritis; they recovered under the use of free bleeding, purging, fomentations, and diaphoretics.

There was one case of metro-peritonitis, which was cured by free and repeated abstractions of blood generally and locally, the use of blisters, the administration of calomel, Dover's powders, and the spirits of turpentine.

One patient (of strumous diathesis) became the subject of abscess in both mammæ, from which she recovered, one gland resuming its functions.

There was one case of abscess in the vagina or cervix uteri during pregnancy. It was relieved by mucilaginous injections per vaginam previous to delivery, and apparently cured by a recurrence to the same treatment some weeks after parturition.

Two cases of prolapsus uteri were observed to follow labour. In one case it was probably induced by the patient rising on the second day after delivery, to go into another room, to supply the wants of one of her children; the other patient had been subject to the affection previous to her late pregnancy.

One case of prolapsus vesicæ occurred without any assignable cause, shortly after a favourable labour of only eight hours' duration.

Gunshot Wound of the Head.—Recovery.—Dr. A. C. Post relates in our cotemporary the *New York Journal of Medicine and Surgery*, (January, 1841,) the following interesting example of this accident, communicated to him by G. W. Hulse, M. D., U. S. A.

James Graham, aged about 22 years, a private in the Regiment of Creek Volunteers, in October, 1836, near Fort Brooke, in East Florida, was wounded by a rifle ball, which struck the right parietal bone a little above the lower anterior angle. After receiving the ball, he rose from a sitting posture, and exclaimed to those near, that some one had shot him, but soon fell down into a state of insensibility. I saw him within fifteen or twenty minutes after the injury. He was then insensible, and in a comatose state, and could give no account of himself; the pupils were dilated and immovable, and there was stertorous breathing, with a slow and soft pulse. From an examination of the wound, it was evident that the ball had passed in the cavity of the cranium, though it had not penetrated the dura mater. The symptoms clearly indicated that there was undue pressure upon the brain. The direction that the ball had taken after entering the skull, was found to be upwards and forwards under the os frontis; and the place where it had lodged, as nearly as could be ascertained, was an inch or a little more, from the place where it entered.

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* It is proper to remark that the delay in the delivery of the placenta depended in most instances upon its being purposely left to the efforts of the uterus and the voluntary powers of the mother, care being taken not to interfere with the *natural process* of extrusion of placenta, with a view to determine the length of time it might require.

A convenient flap was made at the wound, so as to expose the opening into the skull, and to make room for trephining. The projectile had made through the bone a complete perforation, which was smaller than sufficient to admit an ordinary rifle ball, although no fissure could be observed extending in any direction from the opening, and no portion of bone was found depressed.

A trephine was applied, and on removing that portion of bone under which it was supposed that the ball had lodged, it was found lying upon the dura mater considerably flattened, and its diameter so much increased that it would have been impossible to have removed it by the same opening through which it had entered. In the subsequent treatment of the case, there was nothing unusual. The day following the operation, there was increased velocity and hardness of the pulse; about sixteen ounces of blood were taken from the arm, and a saline cathartic ordered. On the second day, pulse softer and less frequent; the medicine had operated well, and there was less insensibility. The patient conversed a little, and asked for something to eat.

In consequence of a march into the territory, I did not see him again for about ten weeks, when he rejoined his regiment perfectly well. But I was informed by Assistant Surgeons Low and Byrnes, who had charge of him in the meantime, that nothing unusual had occurred. The wound of the soft parts healed slowly, a circumstance which has long been observed in gunshot wounds, especially where balls enter when their velocity is great.

Coagulation of the Blood fifteen hours after death.—The patient had been delivered a month previously, and had suffered under symptoms, as it was believed, of peritonitis. For this she was bled, and had taken small doses of calomel, which produced severe salivation. An accurate history of the case could not, however, be obtained, and Dr. Dunglison did not see the individual until after death. This ensued after a severe agony, and on examining the head fifteen hours afterwards, the blood that flowed from the arteries of the brain coagulated.

Dr. Dunglison refers to two analogous cases, in which the blood remained fluid in the vessels for a considerable time after death, and coagulated when removed from them. One is stated by Dr. John Davy, in his "Researches Physiological and Anatomical," and the other by Dr. Samuel Jackson, in his account of the yellow fever of Philadelphia, in 1820. (*Philadelphia Journal of the Medical and Physical Sciences*, vol. ii, p. 22.) The latter says, "The veins of the omentum, mesentery, in fact, the whole system of the vena portæ were always distended with fluid blood. It was at first supposed that the blood, being thus fluid, was in the dissolved state, so often mentioned by writers. But Dr. Hewson, wishing to make some experiments, collected portions of it in cups. In the course of ten or fifteen minutes it was firmly coagulated, and this was found in subsequent observations invariably to occur."

Dr. Dunglison observes that in all these cases, including his own, mercury appears to have been largely administered, and it may be a topic for farther investigation, whether this peculiarity be in any manner connected with the free use of that or other agents.—*Proceedings of the American Philosophical Society*, No. 12, p. 216.

Flattening of the Head by a fall.—Dr. J. L. Burtt writes to us that the child whose case was noticed in our Number for Aug. 1840, p. 513, had, at the date of his letter, six months after the accident, suffered from none of the consequences which often follow injuries of the head. The shape of the cranium is completely restored, and the child, both bodily and mentally, is apparently in good condition.

Opinions of Benjamin Franklin, relative to Animal Magnetism, (extracted from a letter to M. De La Condamine).*

Passy, March 19, 1784.

Sir:—I received the very obliging letter you did me the honor of writing to me the 8th inst., with the epigram, for which please accept my thanks.

You desire my sentiments concerning the cures performed by Camus and Mesmer. I think, that, in general, maladies caused by obstructions, may be treated by electricity with advantage. As to the animal magnetism, so much talked of, I must doubt its existence till I can see or feel some effect of it. None of the cures said to be performed by it, have fallen under my observation, and there being so many disorders which cure themselves, and such a disposition in mankind to deceive themselves and one another, on these occasions, and living long, has given me so frequent opportunities of seeing certain remedies cried up as curing every thing, and yet soon after totally laid aside as useless, I cannot but fear that the expectation of great advantage from this new method of treating diseases will prove a delusion. That delusion may, however, in some cases be of use while it lasts. There are in every great, rich city, a number of persons, who are never in health, because they are fond of medicines, and always taking them, whereby they derange the natural functions, and hurt their constitution. If these people can be persuaded to forbear these drugs, in expectation of being cured by only the physician's finger, or an iron rod pointing at them, they may possibly find good effects, though they mistake the cause.†

I have the honour to be, &c. B. Franklin.

Transylvania University.—The chair of the theory and practice of medicine in the medical department of this institution is at present vacant, and with a view to fill it in the best possible manner, the board of trustees invite applications for the appointment from the members of the medical profession.

The communications on the subject must be addressed to the *Dean of the Medical Faculty of Transylvania University*, and come to hand before the first of June next, when the appointment will be made. The name of no one but the successful candidate will be made public.

The Transylvania is the leading western school; the vacant professorship is a most honourable, and we believe a lucrative one, and doubtless there will be numerous applicants.

The number of students the past session was 254, of whom 62 received the degree of M. D., at the commencement held on the 13th March, 1841. At the same time the honorary degree of M. D. was conferred on Drs. Dunlap and Wroth.

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* The original of this letter is in the large and valuable collection of MSS., of the American Philosophical Society.—Ed.

† In writing to Dr. Ingenhousz, some time afterwards on this subject, Dr. Franklin said, "Mesmer is still here and has still some adherents and some practice. It is surprising how much credulity still subsists in the world. I suppose all the physicians in France put together, have not made so much money, during the time he has been here, as he alone has done. And we have now a fresh folly. A magnetiser pretends, that he can, by establishing what is called a *rapport* between any person and a *somnambule*, put it in the power of that person to direct the actions of the *somnambule*, by a simple strong volition only, without speaking or making any signs; and many people daily flock to see this strange operation."—*Spark's Life of Franklin.*

Lunatics and Idiots in the State of New Jersey.—From the very interesting report of the commissioners, with a copy of which we have been favoured by the chairman, we learn that the ascertained number of insane males is 252, females 163, computed of both sex 90. The ascertained number of male idiots is 93, females 108. The commissioners earnestly recommend the erection of a state asylum for their relief.

Connecticut Retreat for the Insane.—1001 patients have been admitted into this institution since its opening on the 1st of April 1824, of whom 563 have been cured. Of the number admitted 537 were recent cases, of which 451 were cured.

University of Pennsylvania.—The number of students attending the lectures in the Medical department in this Institution the past session was 410.

Albany Medical College.—The class in this institution the past session numbered 122; and 29 of them have been graduated doctors in medicine.

Medical Institute of Louisville.—The class the past session numbered 205.

Geneva College.—The number of students in the Medical Department the past session was 136; and at the commencement held on the 26th January, 34 received the degree of M. D.

Harvard University.—The number of Medical students the past session was 88.

Medical Institute of Philadelphia.—The Summer Course of Lectures will begin on Monday the 5th day of April next, and be continued as usual to the last of October. Applications are to be made to W. E. Horner, M. D., Secretary.

The Library of Practical Medicine:—Arranged and edited by Alexander Tweedie, Physician to the London Fever Hospital, &c., &c. In consequence of the many applications from country practitioners for the Library of Practical Medicine, the publishers have been induced to commence its publication in a *periodical form.* It will be completed in fifteen Nos. or five volumes, of about 560 pages each, and will be sent by mail to subscribers on the following terms:

On the receipt of five dollars, any two volumes of the work will be sent as directed, done up in six numbers, or the whole five volumes will be sent in fifteen numbers on the receipt of twelve dollars and a half; or any four volumes done up in twelve numbers for ten dollars; or a complete set will be furnished for fifteen dollars handsomely bound in sheep; or any single volume will be furnished neatly done up in extra cloth for three dollars. Those persons who subscribe for the work in numbers, can have at any time a bound set furnished in exchange for numbers, on their paying the difference between the cost of the numbers and fifteen dollars, the price of a complete set, in such cases three numbers belonging to one volume must at least be returned. No part of the work will be sent without the receipt of the money.

The first number was issued on the 1st of January 1841, and a number is to be published every week until the whole fifteen numbers are issued. Each volume will contain about five hundred and sixty large octavo pages, handsomely printed on fine paper. The notices which have been given of this work, will show the high value we attach to it. A copy should be in the library of every physician.

Tweedie's Library of Practical Medicine.—Messrs. Lea & Blanchard have just issued the *fourth* volume of this valuable work. It comprises Dissertations on Diseases of the Digestive, Urinary, and Uterine Organs; by Drs. Joy, Symonds, Budd, Thomson, Christison, Ferguson, and Simpson, and will fully sustain the high character acquired by the preceding volumes.

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